

# GAPSS 2008

Findings from the  
Gay Auckland Periodic Sex Survey

Te Rangahau Tāne Ai Tāne

Peter Saxton, Nigel Dickson and Tony Hughes



NEW ZEALAND AIDS FOUNDATION  
Te Tūāpapa Māte Āraikore o Aotearoa

# GAPSS 2008

## Findings from the Gay Auckland Periodic Sex Survey

## Te Rangahau Tāne Ai Tāne

**September 2010**

**Peter Saxton<sup>1,2</sup>**

**Nigel Dickson<sup>2</sup>**

**Tony Hughes<sup>1</sup>**

<sup>1</sup>Research, Analysis and Information Unit  
New Zealand AIDS Foundation  
Te Tūāpapa Mate Āraikore O Aotearoa

<sup>2</sup>AIDS Epidemiology Group  
Department of Preventive and Social Medicine  
University of Otago

Print ISBN: 978-0-909019-06-8

Online ISBN: 978-0-909019-07-5

## | Acknowledgements

The Gay Auckland Periodic Sex Survey (GAPSS) 2008 was jointly undertaken by the Research, Analysis and Information Unit at the New Zealand AIDS Foundation (NZAF), and the AIDS Epidemiology Group (AEG), Department of Preventive and Social Medicine, University of Otago. The study received funding from the Ministry of Health.

The authors of this report would particularly like to acknowledge:

- The 1527 men who have sex with men who freely gave their time to complete the survey.
- The 2008 study recruitment coordinator Dr John Rowden.
- The 2008 recruitment team: Antony, Aroha, Ben, Caitlyn, Cam, Campbell, Carlos, Chao, Charlene, Doug, Herman, Jan, Jason, Jay, Jeff, Joseph, Joseph, Joshua, Kristina, Malcolm, Margaret, Maria, Mike, Ollie, Paul, Philip, and Sue.
- The management and staff of the Big Gay Out, the five saunas and sex-on-site venues and five gay bars who generously allowed us to use their premises.
- Sue McAllister, AIDS Epidemiology Group, for providing data on HIV diagnoses.
- Vern Keller, NZAF Librarian, for assistance with graphing the New Zealand epidemiology of HIV.
- Staff of the NZAF Gay Men's Health and Positive Health teams for feedback and suggestions on survey content and recruitment strategies for 2008.
- The Wednesday night Volunteer Team at NZAF for helping pilot test the 2008 questionnaire.

Contact details:      Research Unit  
New Zealand AIDS Foundation  
PO Box 6663 Wellesley Street  
Auckland  
New Zealand  
[research@nzaf.org.nz](mailto:research@nzaf.org.nz)  
[www.nzaf.org.nz/research](http://www.nzaf.org.nz/research)



Suggested citation:

Saxton, P., Dickson, N. & Hughes, A. (2010). *GAPSS 2008: Findings from the Gay Auckland Periodic Sex Survey*. Auckland: New Zealand AIDS Foundation.

Cover design: Inhouse Design, Ponsonby, Auckland.

Pre-press and printing: Lithotech, Auckland.

Stock photographs: GayNZ.com and NZAF.

<b>Acknowledgements</b>	2
<b>Executive summary</b>	5
<b>Introduction</b>	11
Behavioural surveillance	12
Aims and objectives	13
Epidemiology of HIV in New Zealand	13
<b>Study recruitment</b>	15
Sample selection	15
Questionnaire	15
Presentation of data in this report	16
Missing values and new ways of reporting data	16
Statistical analysis	17
<b>Characteristics of the sample</b>	18
Composition of the sample and response rate	18
Age	19
Ethnicity	19
Education	20
Area of residence	21
Sexual identity	22
Amount of free time spent with gay men	22
Workforce status	23
<b>HIV testing and HIV status</b>	24
HIV testing	24
HIV status	26
<b>Sexual relationships</b>	29
Number of sex partners	29
Types of sexual relationships over the previous six months	31
Current regular sex partner	32
Current regular partner's HIV testing	33
Concurrent sexual partnering	36
<b>Internet dating and personal profiles</b>	38
Had sex with a man met on the Internet in the last six months	38
Personal profiles at the time of survey	39
<b>Sources of new sexual contacts</b>	40
<b>Knowledge about HIV and safe sex</b>	42
<b>Attitudes</b>	43

<b>Condom use classifications</b>	49
Any unprotected anal sex	49
High, Medium, Low condom use	49
<b>Sex with a current regular “boyfriend”-type partner</b>	51
Anal sex with a current boyfriend	51
Any unprotected anal sex with current boyfriend	52
High, Medium, Low condom use with current boyfriend	54
Changes over time among key groups	56
<b>Sex with a current regular “fuckbuddy”-type partner</b>	59
Anal sex with a current fuckbuddy	59
Any unprotected anal sex with current fuckbuddy	60
High, Medium, Low condom use with current fuckbuddy	62
<b>Sex with casual partners</b>	65
Anal sex with a casual partner	65
Any unprotected anal sex with casual partner/s	66
High, Medium, Low condom use with casual partner/s	68
Changes over time among key groups	70
<b>Characteristics of last anal sex partner</b>	73
<b>Sexual health check-ups and sexually transmitted infections</b>	77
Sexual health check-up	77
Sexually transmitted infections	78
<b>Group sex, sex with amyl and methamphetamines</b>	79
Group sex	79
Amyl use and methamphetamine use during sex	80
<b>Summary</b>	81
<b>Conclusion</b>	84
<b>References</b>	85

## Executive summary

This report contains the basic results of the 2008 Gay Auckland Periodic Sex Survey (GAPSS) undertaken in Auckland during the week of 10<sup>th</sup>-17<sup>th</sup> February 2008. Of the 1527 men enrolled, 68.6% of the sample was recruited at the Big Gay Out fair day, 11.1% at gay bars, and 20.3% at gay saunas or sex-on-site venues.

The following summarises findings across the four GAPSS surveys (2002, 2004, 2006 and 2008) as well as specific results for 2008:

### Previous participation in GAPSS

- 30.5% had participated in a previous GAPSS or GOSS survey, while for 69.5% this was the first time they had taken part.

### HIV testing and HIV status

- Rates of ever having had an HIV test increased in 2008:
  - 74.9%, 74.8%, 74.8% and 79.0% of all respondents 2002-2008.
- Recent HIV testing rates (testing in the 12 months prior to survey) also increased:
  - 39.5%, 41.4%, 41.7% and 45.2% of all respondents 2002-2008.
- The proportion of each sample who reported that they were HIV positive was less than 5%:
  - 5.0%, 4.8%, 3.5%, 4.3% of all respondents 2002-2008.
- Belief that they were “definitely HIV negative”:
  - Increased among those who had last tested HIV negative 2004-2008:
    - 67.3%, 69.4%, 74.6%;
  - Was stable among those who had never tested for HIV 2004-2008:
    - 60.9%, 63.2%, 62.0%.

### Sexual relationships

- The most common number of male sexual partners over the previous six months:
  - Between 2 and 5 in each of the four surveys.
- The proportion reporting more than 20 male sexual partners in the previous six months declined over time:
  - 16.9%, 14.2%, 11.9%, 9.8% of all respondents 2002-2008.

- Were in a regular sexual relationship with a man at the time of survey:
  - 51.0%, 55.5%, 55.9%, 54.6% of all respondents 2002-2008.
- Description of current regular sex partner remained stable 2002-2008:
  - 78.1%, 79.5%, 77.1%, 78.3% described them as a “boyfriend, long-term lover, life partner, or civil union partner”;
  - 21.1%, 20.2%, 22.9%, 21.7% described them as a “fuckbuddy”.
- When invited to state their belief about their current regular sex partner’s HIV test history (non-tested positive respondents in 2008):
  - 20.3% stated they didn’t know or hadn’t asked their regular sex partner;
  - 7.2% stated that he hadn’t tested for HIV;
  - 70.7% thought their current partner had tested for HIV and that the last result was HIV negative;
  - 1.9% stated that their current partner had tested HIV positive.
- Compared to respondents with a current “boyfriend”-type partner, respondents in a current “fuckbuddy”-type relationship were more likely to state they were uncertain about either their own HIV test status or that of their fuckbuddy partner (2008).
- Of those who had been in their current regular relationship for at least six months, the proportion who reported sex with another man over this period (concurrent sex) declined slightly:
  - 57.8%, 57.1%, 54.1%, 52.8% of these respondents 2002-2008.

#### Internet dating and personal profiles

- Had had sex with a man met on the Internet in the last six months:
  - 26.6%, 44.8%, 41.7%, 44.5% of all respondents 2002-2008.
- Most common Internet dating sites used at time of survey (all respondents):
  - NZDating (40.0%), Gaydar (21.3%), Gay.co.nz (13.8%) (2008 only).
- Most common social networking sites used at time of survey (all respondents):
  - Facebook (37.4%), Bebo (21.2%), Myspace (16.3%) (2008 only).

#### Sources of new sexual contacts

- 59.7% of all respondents reported that they had met a new sexual contact in the six months prior to survey (i.e. a man they had not had sex with prior to this) (2008 only).
- Of those who had met a new contact recently, the proportion who had met *at least one* of these new contacts at a given venue or site was:
  - Internet dating site (48.2%), gay sauna (42.6%), gay bar or nightclub (36.2%).

- Of the total number of new sexual contacts reported in the six months prior to survey in 2008, the proportion that were acquired at various types of places was:
  - Gay sauna (26.9%), Internet dating site (18.4%), cruise club (17.7%), gay bar (12.0%).

#### Knowledge about HIV and safe sex (2008 respondents only)

- 98.1% knew that “anal sex without a condom is very high risk for HIV transmission”.
- 82.6% knew that “oral sex is low risk for HIV transmission”.
- 42.8% knew that “HIV is more easily transmitted to others in the first few weeks after infection”.
- 80.3% knew that “HIV cannot pass through an undamaged latex condom”.

#### Attitudes to the HIV epidemic

- “HIV/AIDS is a less serious threat than it used to be because of new treatments”:
  - 19.5%, 19.1%, 16.5%, 20.8% agreed/strongly agreed (2002-2008).
- “Condoms are OK as part of sex”:
  - 97.0%, 93.2%, 95.5%, 96.4% agreed/strongly agreed (2002-2008).
- “I would sometimes rather risk HIV transmission than use a condom during anal sex”:
  - 12.9%, 10.3%, 9.2%, 11.5% agreed/strongly agreed (2002-2008).
- “I don’t like wearing condoms because they reduce sensitivity”:
  - 41.4%, 37.5%, 31.7%, 36.0% agreed/strongly agreed (2002-2008).
- “A man who knows he has HIV would tell me he was positive before we had sex”:
  - 23.3%, 33.9%, 29.9% agreed/strongly agreed (2004-2008 only).
- “The sex I have is always as safe as I want it to be”:
  - 89.9%, 90.8%, agreed/strongly agreed (2002 and 2008 only).
- “Sometimes I feel under pressure not to use a condom”:
  - 25.4% agreed/strongly agreed (2008 only).
- “In the last year I’ve seen safe sex messages that were relevant to me”:
  - 82.9% agreed/strongly agreed (2008 only).

#### Sex and condom use with current regular “boyfriend” partner

- Had anal sex with current boyfriend in the previous six months:



- 80.9%, 81.2%, 83.1%, 83.8% of those with a current boyfriend (2002-2008).
- Condom use during anal sex with a current boyfriend in the previous six months:
  - 27.7%, 32.1%, 23.1%, 26.8% of those having anal sex with a current boyfriend *always used a condom* (2002-2008);
  - 72.3%, 67.9%, 76.9%, 73.2% of those having anal sex with a current boyfriend *at least once did not use a condom* (2002-2008).
- Alternatively, measuring condom use by “High” (always or almost always), “Medium” or “Low” (never or very rarely):
  - 34.6%, 38.1%, 33.7%, 34.0% of those having anal sex with a current boyfriend were *High condom users* (2002-2008);
  - 57.1%, 55.1%, 59.3%, 59.2% of those having anal sex with a current boyfriend were *Low condom users* (2002-2008).
- Of those who had a current boyfriend at the time of survey, any non-condom use increased over time among respondents who were:
  - Aged 30-44;
  - In a relationship of unknown HIV seroconcordancy.

#### Sex and condom use with current regular “fuckbuddy” partner

- Had anal sex with current fuckbuddy in the previous six months:
  - 76.5%, 79.8%, 83.6%, 85.8% of those with a current fuckbuddy (2002-2008).
- Condom use during anal sex with a current fuckbuddy in the previous six months:
  - 56.5%, 57.6%, 65.0%, 61.0% of those having anal sex with a current fuckbuddy *always used a condom* (2002-2008);
  - 43.6%, 42.4%, 35.0%, 38.9% of those having anal sex with a current fuckbuddy *at least once did not use a condom* (2002-2008).
- Alternatively, measuring condom use by “High” (always or almost always), “Medium” or “Low” (never or very rarely):
  - 80.7%, 66.7%, 77.2%, 79.1% of those having anal sex with a current fuckbuddy were *High condom users* (2002-2008);
  - 8.1%, 19.2%, 17.5%, 10.1% of those having anal sex with a current fuckbuddy were *Low condom users* (2002-2008).

#### Sex and condom use with casual partners

- Had casual sex in the six months prior to survey:
  - 66.2%, 64.0%, 65.8%, 65.7% of all respondents (2002-2008).
- Had anal sex with casual partner/s in the previous six months:
  - 68.2%, 72.4%, 72.3%, 80.4% of those who had casual sex (2002-2008).

- Condom use during anal sex with a casual partner in the previous six months:
  - 66.8%, 66.5%, 65.1%, 68.8% of those having anal sex with a casual partner/s *always used a condom* (2002-2008);
  - 33.2%, 33.5%, 34.9%, 31.2% of those having anal sex with a casual partner/s *at least once did not use a condom* (2002-2008).
- Alternatively, measuring condom use by “High” (always or almost always), “Medium” or “Low” (never or very rarely):
  - 85.4%, 85.7%, 85.5%, 86.3% of those having anal sex with a casual partner/s were *High condom users* (2002-2008);
  - 4.5%, 2.1%, 5.0%, 5.7% of those having anal sex with a casual partner/s were *Low condom users* (2002-2008).
- Of those who had casual sex in the six months prior to survey, any non-condom use increased over time among respondents who:
  - Had more than 20 male sexual partners over this period.

#### Characteristics of last anal sex partner (2008 respondents only)

- In the six months prior to survey, the last male anal sex partner reported by respondents was:
  - Regular boyfriend (44.3%);
  - Regular fuckbuddy (17.4%)
  - Casual or anonymous partner (38.4%).
- Relative to the respondent’s own age, the assumed age of this man was:
  - Younger by more than five years (39.2%);
  - Within five years either side (younger or older) (39.7%);
  - Older by more than five years (21.0%).
- This man was most likely met through:
  - Internet dating site (26.2%), gay bar or nightclub (22.2%), gay sauna (15.4%), friends (13.7%).
- Relative to their own level of sexual partnering, respondents believed this man to usually:
  - Have fewer sexual partners (24.7%);
  - Have about the same number (32.9%);
  - Have sex with more men (17.8%);
  - 24.7% stated they “really didn’t know” anything about this man’s sexual activity.
- At the last session of anal sex with this man, 62.6% used condoms and 37.4% did not.
- Using a condom at the last episode of anal sex varied by the type of last anal sex partner:
  - If he was a regular boyfriend (40.5%);

- If he was a regular fuckbuddy (77.8%);
- If he was a casual or anonymous partner (81.2%).

#### Sexual health check-ups and sexually transmitted infections (2006-2008 respondents only)

- Been for a sexual health check-up in the previous year:
  - 45.4%, 46.8% (2006-2008).
- Reported an STI in the previous year:
  - 8.0%, 10.0% (2006-2008).
- Most common STIs diagnosed among the respondents:
  - Chlamydia (3.4%), gonorrhoea (2.9%).

#### Group sex, substance use during sex (2008 respondents only)

- 16.8% reported engaging in group sex at least once in the previous six months.
- 41.6% reported any amyl use during sex in the previous six months.
- 6.6% reported using any methamphetamine/ "p" during sex in the previous six months.



## | Introduction

The Gay Auckland Periodic Sex Survey (GAPSS) 2008 is the fourth study undertaken in Auckland as part of a regular behavioural surveillance programme on HIV risk practices among men who have sex with men (MSM). GAPSS 2008 surveyed a broad cross-section of MSM about sexual practices, HIV testing and attitudes to the epidemic with a view to monitoring changes in these outcomes since the inaugural GAPSS survey in 2002. In addition, and as in previous rounds, a number of new questions not asked in previous surveys were included in 2008. These novel topics included sources of new sexual contacts, characteristics of one's last anal sex partner, substance use during sex and group sex, social media use, Internet dating profiles, and new items on attitudes to safe sex and HIV.

The GAPSS project consists of a conventional offline survey conducted over one week during the gay pride festival in February/March. In 2008, as in 2006, an online module was also added to the behavioural surveillance programme. The Gay men's Online Sex Survey (GOSS) commences at the end of the GAPSS offline data collection and recruits MSM through heavy promotion on two Internet dating sites. As no publicity for the GOSS survey occurs prior to it being launched, and as men who had recently participated in GAPSS are ineligible to participate in GOSS, the GOSS survey offers a sample of MSM who have been missed by the conventional GAPSS offline surveillance programme (Saxton et al. 2007). The addition of an online module was envisioned as a logical response to the twin challenges posed by a dramatic increase in the Internet as a source of male sexual partners which was identified in the 2004 GAPSS report (Saxton, Dickson and Hughes, 2004), simultaneous with an increase in HIV diagnoses among MSM in New Zealand (see below). A summary report of the GOSS findings from 2006 and 2008 will be released separately.

An important feature of the initial analysis and dissemination process for each GAPSS survey is to feed key results back to the communities that participated in the research, as well as MSM community stakeholders. A substantial amount of analysis and dissemination of the GAPSS and GOSS findings has preceded this report, including the lead investigator's PhD thesis (Saxton 2009), and links to examples of this work can be found in the reference list at the end and at [www.nzaf.org.nz/research](http://www.nzaf.org.nz/research) or [www.otago.ac.nz/aidsepigroup](http://www.otago.ac.nz/aidsepigroup).

Thus, another important feature of this reporting process is to stimulate interest in additional research, and to encourage engagement in the findings by communities, funders and providers such as the NZAF. The GAPSS research team welcomes all approaches to this end.

The 2008 GAPSS survey was a collaborative project involving the Research, Analysis and Information Unit of the community-based New Zealand AIDS Foundation (NZAF) in Auckland and the AIDS Epidemiology Group (AEG) based in the Department of Preventive and Social Medicine at the University of Otago Medical School in Dunedin. It received funding from the Ministry of Health and ethics approval from the Northern X Ethics Committee.

## **Behavioural surveillance**

The United Nations Joint Programme on HIV/AIDS (UNAIDS) considers behavioural surveillance to be a key component of national surveillance of the HIV/AIDS epidemic (UNAIDS/WHO 2000). Periodic behavioural surveillance - undertaking similar studies conducted at regular intervals - has three main aims:

- to enable changes in the overall level of risk in a specific population to be traced and to provide early warning of possible changes in the epidemic;
- to help identify sub-groups in which higher-risk activities are evident or emerging, allowing prevention programmes to be properly targeted;
- to help generate a sustained community response to the epidemic by encouraging public engagement in the results of behavioural surveillance.

Many health surveys use random national telephone sampling to generate participants. However, obtaining large numbers of participants in this way who are MSM is costly due mainly to the low prevalence of homosexuality in the population, an absence of registers identifying precisely where homosexual men live, and the high number of calls that would be required. Although progress has been made in describing the geographic micro-location of MSM in Auckland (Hughes and Saxton, 2006), obtaining repeat samples of ~ 1000 MSM in this way is still impractical given limited resources. In order to generate a large sample of MSM, the GAPSS project instead employed non-random techniques that target venues and events that attract large numbers of MSM, a technique that is described as “opportunistic” research.

When using non-random sampling in this way, behavioural surveillance must use methods that encourage participation amongst a wide variety of individuals if it is to generalise the findings beyond an otherwise restricted group. For results to be comparable from period to period, recruitment strategies also need to be consistent each time so that biases between each of the study samples are minimised. The inclusion of questions on demographic characteristics in each successive survey period helps to assess whether samples drawn from consecutive time periods are broadly similar or not, and this is important when interpreting whether a change in the results reflects an actual change or merely the characteristics of a different “slice” of the target population. Issues relating to the conduct of the GAPSS 2008 survey and the characteristics of the study participants are therefore described in more detail in the next two chapters.

The GAPSS project fulfils some of the goals set out in two national strategic documents: *The New Zealand Health Monitor* and the *HIV/AIDS Action Plan: Sexual and Reproductive Health Strategy*. The *New Zealand Health Monitor* notes in “Section 2: Health information” that “you cannot manage what you do not measure” (Ministry of Health, 2002: 6) and highlights the importance of quality information streams when making evidence-based decisions in health promotion. The *HIV/AIDS Action Plan* also lists the objective of better understanding the behaviours driving HIV infection and the trends in populations at highest risk of HIV infection (Ministry of Health 2003: 40).



## ***Aims and objectives***

The aim of GAPSS 2008 was to obtain follow-up information on behaviours and attitudes of a sample of MSM that was selected in a manner similar to the 2002, 2004 and 2006 surveys.

The specific objectives were to:

- Obtain a sample of MSM attending a number of different sites in a similar way to 2002-6;
- Collect information from this sample on demographic characteristics, sexual practices, HIV testing and status, and attitudes to HIV and safe sex behaviour;
- Present the 2008 data with a focus on identifying change since 2002-6;
- Present information collected on new aspects of the HIV epidemic not measured before;
- Communicate the findings in ways that increase their uptake in policy and HIV health promotion planning.

## ***Epidemiology of HIV in New Zealand***

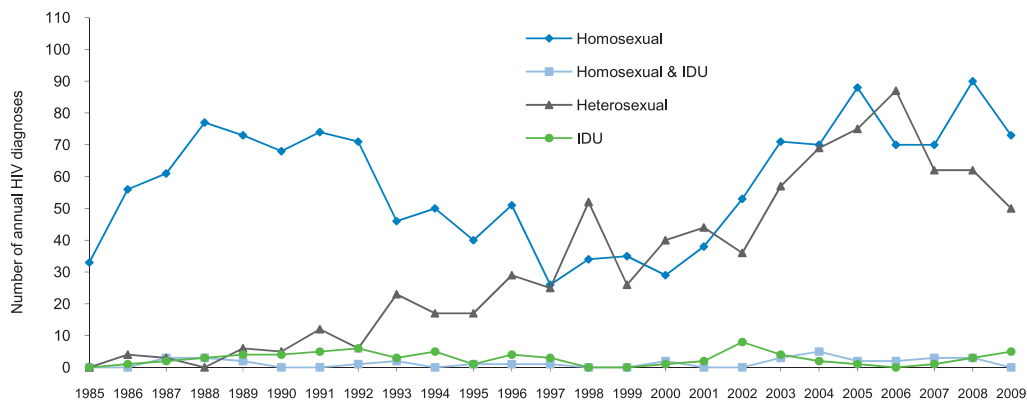
Periodic behavioural surveillance complements the routine surveillance of HIV infection, which includes the monitoring of new HIV diagnoses. Although AIDS is a notifiable condition in New Zealand, the introduction of Highly Active Anti-Retroviral Therapies (HAART) has made AIDS diagnoses less useful as a means of tracking the HIV epidemic. HIV is not notifiable in New Zealand, but since 1996 an enhanced surveillance system for newly reported HIV diagnoses has provided detailed information on HIV diagnoses and improved understanding of patterns in HIV infection (Paul et al. 2000).

AIDS diagnoses peaked in 1989 and have generally declined since then. New Zealand was one of the first countries in the world to experience a decline in AIDS incidence (Sharples et al. 1996), and the major factors for this are likely to have been the reduction in HIV infection amongst men who have sex with men in the mid-1980s, and the effective prevention of epidemics in other population subgroups. Since the mid-1990s, AIDS incidence has also reduced in part due to the availability of antiretroviral therapies that have delayed the progression of HIV infection to AIDS.

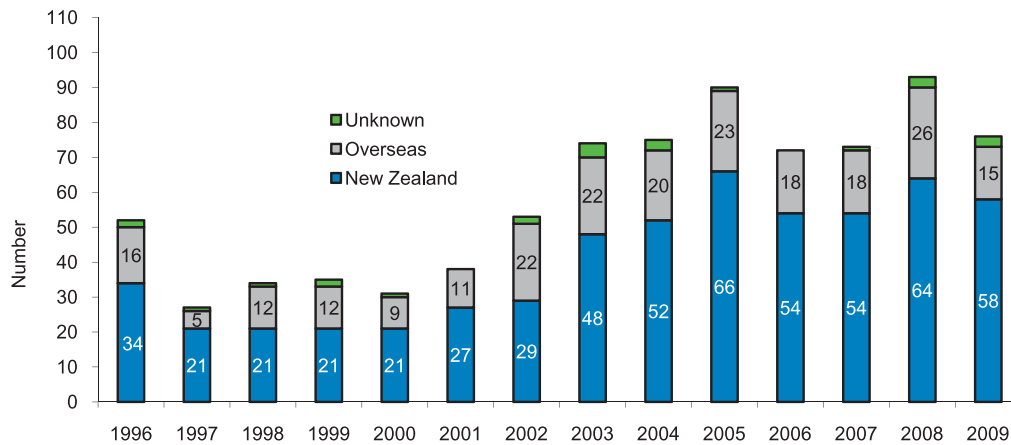
The HIV epidemic in New Zealand is comprised of two distinct sub-epidemics (Fig 1), one among MSM that is largely locally-acquired (Fig 2), and one among heterosexual migrants for whom infection was largely acquired overseas (Fig 3) in countries of high HIV prevalence such as sub-Saharan Africa. HIV diagnoses among MSM have increased dramatically in recent years (AIDS Epidemiology Group, 2010). As Fig 2 shows, the year 2008 witnessed the highest ever annual number of HIV diagnoses among MSM in New Zealand, after the previous peak in 2005.

MSM remain the group most at risk of acquiring HIV infection within New Zealand, and over the decade between 2000 and 2009 accounted for 76% of all new HIV diagnoses where infection was reported to have occurred in this country (pers comm. Sue McAllister, AIDS Epidemiology Group).

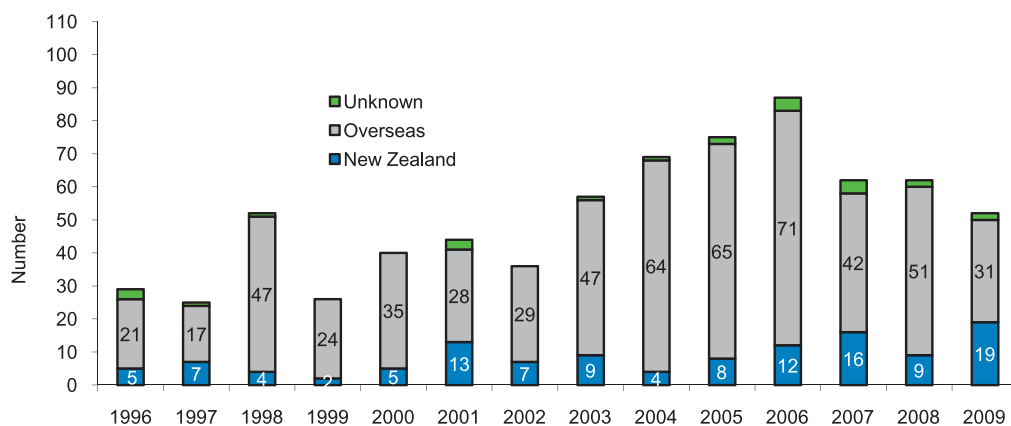
**Figure 1. Annual number of diagnosed HIV infections in New Zealand by risk category 1985-2009**



**Figure 2. Place of infection for annual HIV diagnoses among MSM 1996-2009**



**Figure 3. Place of infection for annual HIV diagnoses among heterosexual cases 1996-2009**



Source: AIDS Epidemiology Group data. IDU = injecting drug user. Data may differ from that previously published due to delayed reporting. Figure 2 includes both men who were reported to have been infected through homosexual sex, and men who have sex with men who could also have been infected through injecting drug use (IDU).

## | Study recruitment

### **Sample selection**

The 2008 GAPSS study surveyed MSM attending: (1) the Big Gay Out (an annual gay pride fair/picnic at a central Auckland park); (2) five saunas and 'sex-on-site' venues frequented by MSM; and (3) five bars or bar-events specifically frequented by gay men.

Men at these sites were invited to take part in the survey by trained recruitment staff. Participants were given a clipboard with a cover, which they could close over their questionnaire for privacy if they wished. The clipboards had a pen, a questionnaire and an information sheet attached to them and respondents were instructed to complete the survey themselves. Magnification sheets were available at all venues for those with sight impairments. Men who stated they lived outside Auckland were still invited to take part as they were regarded as participating in the Auckland gay "scene" if they were at one of the identified recruitment sites.

Secure return boxes for the completed questionnaires were provided near the recruitment staff, and when finished, respondents were requested to place their questionnaire into these boxes themselves in order to ensure the confidentiality of their responses. Completion of the questionnaire generally took five to ten minutes. In 2008, participants were once again offered the opportunity to enter a separate prize draw for double tickets to the HERO party that occurred at the end of the recruitment period.

### **Questionnaire**

The questionnaire consisted of a series of core questions focusing on anal intercourse, use of condoms, sexual partnerships, HIV testing and serostatus, aspects of social attachment to the gay community, and a range of demographic items including age, education, ethnicity, and area of residence. These core questions will be retained in each study to provide information that can be compared over time.

Additional questions formulated in consultation with NZAF's Gay Men's Health Programme and other key stakeholders were also included and may change in future surveys based on the priorities identified by these groups and by emerging questions in the field of HIV prevention. In 2008, new questions were added on sources of new sexual contacts, characteristics of one's last anal sex partner, substance use during sex and group sex, social media use, Internet dating profiles, and three new attitude items. Questions on diagnosis of sexually transmitted infections were derived from those used in 2006.



## Presentation of data in this report

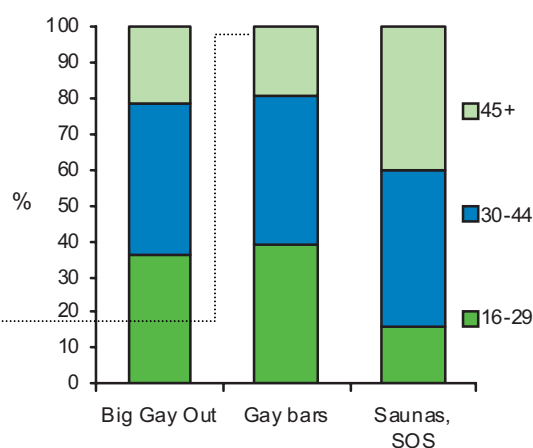
Since the GAPSS sample was composed of respondents who were enrolled at three different types of sites (Big Gay Out, gays bars, gay saunas/cruise clubs), and because men with different characteristics might attend these locations, the key findings are reported by site as well as for the total sample. It is particularly important to bear in mind the composition of the total GAPSS sample when drawing conclusions about changes in key results over time.

Graphs in this report are usually placed on the left or right hand side of a page. Those on the left present comparisons between 2002 - 2008 whereas those on the right present sub-analyses from the 2008 survey.

Column graphs in this report each total to 100%. All proportions listed in the GAPSS 2008 report refer to the non-missing sample (this differs from previous reports).

The example here presents results from the 2008 survey only, and shows the age distribution of respondents recruited at the three different sites. It shows that a lower proportion of respondents recruited at the saunas/sex-on-site venues were younger (aged 16-29), and conversely that a higher proportion were aged 45 and over, when compared with respondents recruited from the Big Gay Out or the gay bars.

Age groups by site of recruitment (2008)



Note: 'Not stated' not shown.  $P < 0.001$ .

## Missing values and new ways of reporting data

The 2008 GAPSS report differs from previous GAPSS reports in two main ways. *First, all percentages are expressed out of the non-missing sample.* This means that if 458 respondents out of all 1527 indicated they were aged 16-29, but 88 respondents gave no age at all (i.e. were missing), then the proportion listed is 31.8% (458 / 1459) instead of 30.0% (458/1527). For this reason percentages listed in this report may not be the same as those cited earlier.

This has mainly been done in order to facilitate comparisons with the online GOSS study results, for which missing values were less prevalent being computer-based and thus easier to follow skips and complex question routing. Unless we account for the possibility that the prevalence of missing values differs slightly between each survey round (or between groups of participants), it may seem that a difference in percentage represents a real difference in the sample's answers, when in fact the percentage is the same among those who chose to respond. It essentially means that whenever comparisons are made, they are being made between all those participants who provided a response of some sort, and exclude those who did not.

Second, the section on condom use with regular sexual partners has for the first time been divided into respondents whose regular sex partner was described as a “boyfriend”, and those who were described as a “fuckbuddy”, reflecting the very different results for each type of partnership. Again, this means that the numbers and percentages in these new sections will differ from the way they have been reported previously.

## **Statistical analysis**

Statistical comparisons have been conducted to determine if behaviours or attitudes differ significantly between two or more groups of respondents: usually between sites of recruitment and also between respondents exhibiting different demographic characteristics (e.g. men of different age groups). These have been done using chi-squared ( $\chi^2$ ) tests of proportions, and tests for trend when exploring changes over time. The smaller the value of the ‘p-value’ derived from the test, the more likely proportions are to be truly different, and not a chance finding.

By convention, if there is a prior reason to expect a difference, and the p-value for the comparison is less than 0.05, then the finding is said to be ‘statistically significant’. In the example above, the p-value of  $p < 0.001$  signifies that the difference in age groups between the three sites is statistically significant. (Note that ‘p=ns’ will denote a non-statistically significant result i.e.  $p > 0.05$ ).

The statistical tests used in this report only test for associations between two different variables, and do not control for the potential impact of other variables in the survey. For example, if a statistically significant association is found between unprotected sex and site of recruitment, this finding might be influenced by the fact that the average age at each site of recruitment is different, and thus the finding in part reflects the effect of age on unprotected sex. Separating out the influence of each variable on a given behaviour is possible by using more complex statistical techniques, and these have been conducted in analyses available elsewhere (e.g. Saxton 2009).

The identification of statistically significant results in this report may therefore best be used to guide decisions about targeting groups via health promotion or social marketing, rather than necessarily “explaining” why the behaviour varies in that way.

Similarly, comparisons between the studies in 2002, 2004, 2006 and 2008 need to be interpreted cautiously as in some instances there may have been some differences in the make up of the three samples. In other cases the small number of respondents in certain categories may make comparisons unreliable, or result in different groups being combined together for analysis. These examples will be noted in the text or beneath Tables and Figures.

Statistical analysis of the data in this report omits ‘not stated’ responses from calculations, thus the tests examine differences between men who provided a response to the relevant questions. Data analysis for the 2008 report was performed using the STATA software package, whereas SPSS was used for previous reports.

## Characteristics of the sample

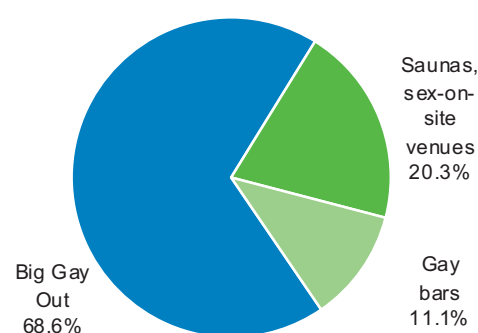
Overall, 1553 questionnaires were completed and placed in the secure return boxes in 2008. Twenty six participants did not answer the majority of the questions and these responses have been removed, leaving 1527 questionnaires that were included in the analysis. This was 24% more than the number of questionnaires completed in 2006 (1228 final responses).

### Composition of the sample and response rate

The majority of the 1527 respondents in 2008 were recruited from the Big Gay Out fair day (68.6%) (Figure 4). In general, the sources of recruitment in 2008 mirrored those in the previous surveys (Table 1).

At the Big Gay Out and the gay bars, individuals who placed their surveys into the return boxes were offered a coloured sticker to indicate they had taken part, assisting the recruitment effort by directing recruiter's approaches towards men who did not have the stickers visible.

**Figure 4. Composition of the sample (2008)**



**Table 1. Responses by site of recruitment and survey**

Site	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Big Gay Out	577	71.1	833	68.3	856	69.7	1048	68.6
Gay bars	96	11.8	164	13.4	152	12.4	169	11.1
Saunas/ sex-on-site	139	17.1	223	18.3	220	17.9	310	20.3
<b>Total</b>	<b>812</b>	<b>100.0</b>	<b>1220</b>	<b>100.0</b>	<b>1228</b>	<b>100.0</b>	<b>1527</b>	<b>100.0</b>

**Table 2. Previous participation**

Previous GAPSS	2008	
	n	%
Once or more	435	30.5
2006 offline	306	21.4
2006 online	51	3.6
2004	144	10.1
2002	72	5.0
Never before	993	69.5
<b>Total</b>	<b>1428</b>	<b>100.0</b>

Note: 99 did not respond.

All respondents in 2008 were asked to indicate whether they had ever completed a GAPSS survey before. Of all the 1428 non-missing respondents, 30.5% reported that they had participated in at least one previous GAPSS survey before (including the online GOSS survey in 2006), whereas for 69.5% the 2008 survey was the first time they had participated in this research programme (Table 2).

A total of 4557 approaches were made by the recruitment team over the one week offline data collection phase in 2008. Based on the records kept, response rates were 50% at the Big Gay Out, 66% at the gay bars and 59% at the saunas and sex-on-site venues. However, a large number of respondents were approached several times at different venues over this week (based on the number of approaches recorded to men who had already completed the survey, including 282 at the bars and 227 at the saunas), meaning that the actual willingness to participate will be higher than indicated by these figures.

## Age

Compared to previous rounds, there was a significant rise in the proportion of the 2008 sample who were aged 45 and over (29.3%). This meant that for the first time there were almost equal proportions in the eldest and youngest age bracket (Table 3).

Table 3. Age group by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
16-29	247	31.1	393	33.4	392	33.4	458	31.8
30-44	385	48.5	496	42.2	516	44.0	559	38.9
45 and over	162	20.4	287	24.4	266	22.7	422	29.3
Total	794	100.0	1176	100.0	1174	100.0	1439	100.0

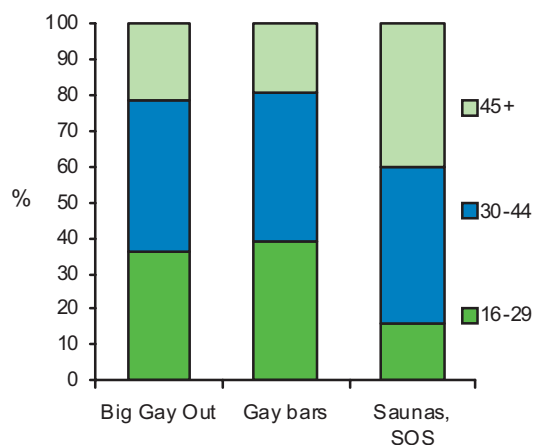
Note: 'Not stated' = 18, 44, 54, 88 by round. P=0.008 over time.

There were statistically significant differences in the age distribution of men recruited at the three sites in 2008 (Fig 5).

Over a third of the men recruited at the Big Gay Out and gay bars were aged under 30, with just 20% aged 45 and over.

Conversely, just 16% of men recruited at the saunas/sex-on-site venues were aged under 30, with roughly equal proportions being aged 30-44 and 45 and over.

Figure 5. Age group by site of recruitment (2008)



Note: 'Not stated' not shown. P<0.001.

## Ethnicity

As in all previous surveys participants were offered the opportunity to indicate more than one ethnicity. Those who indicated multiple ethnicities were classified by first prioritising 'Māori', then 'Pacific Island', 'Asian' and then 'other', as recommended by Statistics New Zealand.

Three quarters (74.3%) of the 2008 sample reported that they were Pakeha or NZ European, and 9.3% reported that they were Māori (Table 4). Looking across the survey rounds, the proportions of men recruited into GAPSS who were NZ European/Pākeha has declined slightly, and the proportion of men who identified as one of several "Asian" ethnicities or as an "other" ethnicity (not separately described here due to low numbers) has risen slightly over the survey programme. This meant that the overall ethnic distribution of the samples has changed significantly over time.

**Table 4. Ethnicity by survey**

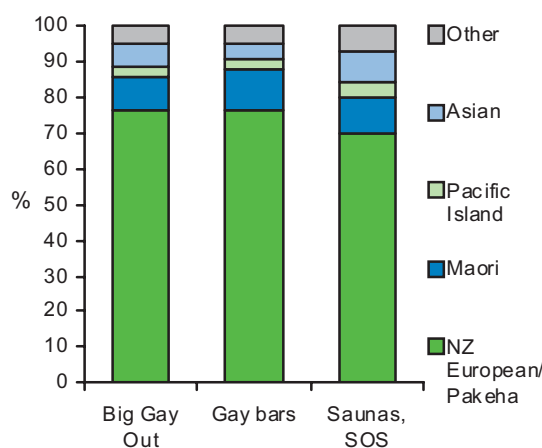
	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
NZ European / Pakeha	630	79.1	892	75.5	875	74.3	1074	74.3
Māori	65	8.2	115	9.7	121	10.3	134	9.3
Pacific Island	26	3.3	46	3.9	40	3.4	49	3.4
Asian	47	5.9	78	6.6	76	6.5	104	7.2
Other	29	3.6	51	4.3	66	5.6	85	5.9
Total	797	100.0	1182	100.0	1178	100.0	1446	100.0

Note: 'Not stated' = 15, 38, 50, 81 by round. P=0.02 over time.

There were statistically significant differences between the ethnicity of men recruited at the three sites (Fig 6).

Respondents at the Big Gay Out and gay bars were broadly similar in terms of ethnicity, although there were proportionately more Māori participants at the gay bars (11.2%, vs 9.1% at the Big Gay Out), and proportionately more participants of Asian ethnicities at the Big Gay Out (6.5%, vs 3.9% at gay bars). Compared to these sites, there were proportionately fewer NZ European respondents in the SOS venues (70.2%), and proportionately more who identified as an Asian ethnicity (8.9%) or as an “other” ethnicity (6.8%).

**Figure 6. Ethnicity by site of recruitment (2008)**



Note: 'Not stated' not shown. P<0.001.

## Education

The education profile of the 2008 sample was high, with just under half of all respondents having a tertiary degree or postgraduate degree. There were no significant changes over time (Table 5).

**Table 5. Highest education qualification by survey**

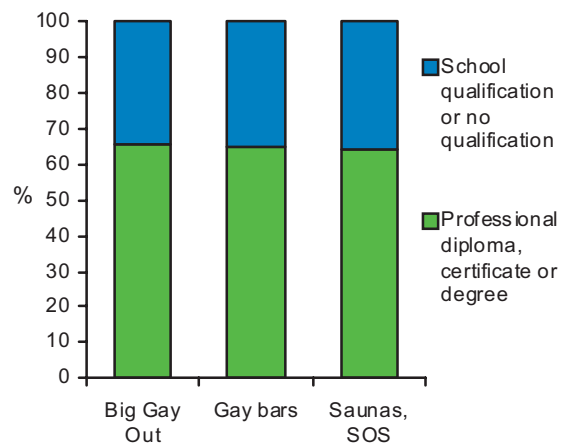
	2002		2004		2006		2008	
	n	%	n	%	n	%	N	%
No school qualifications	42	5.3	68	5.8	68	5.8	89	6.2
School cert, 6 <sup>th</sup> Form cert, NCEA levels 1 or 2	118	15.0	221	18.9	215	18.4	255	17.9
HSC, UE, Bursary, NCEA level 3	106	13.5	123	10.5	128	10.9	134	9.4
Professional diploma or certificate	182	23.2	258	22.0	229	19.6	284	19.9
Bachelors, postgraduate degree	338	43.0	501	42.8	530	45.3	664	46.6
Total	786	100.0	1171	100.0	1170	100.0	1426	100.0

Note: 'Not stated' = 26, 49, 58, 101 by round. P=ns over time.

There were no significant differences in highest educational qualification by site of recruitment in 2008 (Fig 7).

A similar proportion of men recruited from all three sites reported having a professional diploma, trades certificate or tertiary or postgraduate degree (around 65%) as their highest educational qualification.

**Figure 7. Highest education qualification by site of recruitment (2008)**



Note: 'Not stated' not shown. P=ns.

### Area of residence

The residential profile of the 2008 sample was similar to 2006, with around a third living in Auckland's inner city "gay" districts (Table 6).<sup>1</sup>

**Table 6. Area of residence by survey**

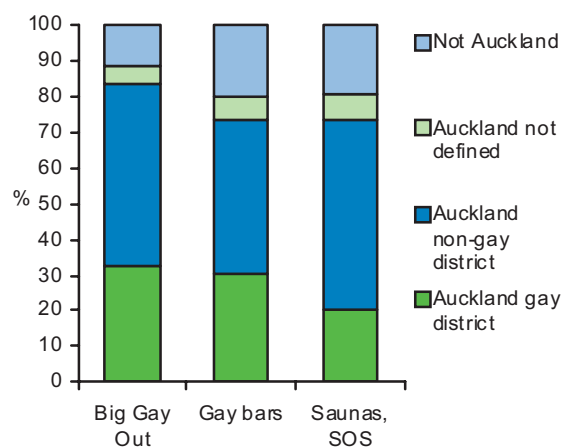
	2002		2004		2006		2008	
	n	%	n	%	n	%	N	%
Auckland inner city "gay" district	247	30.6	323	26.5	381	32.3	448	31.0
Auckland non-inner city district	409	50.6	646	53.0	592	50.1	700	48.5
Auckland (undefined)	72	8.9	86	7.1	41	3.5	62	4.3
Not Auckland	80	9.9	163	13.4	167	14.1	234	16.2
<b>Total</b>	<b>808</b>	<b>100.0</b>	<b>1218</b>	<b>100.0</b>	<b>1181</b>	<b>100.0</b>	<b>1444</b>	<b>100.0</b>

Note: 'Not stated' = 4, 2, 47, 83 by round. P=ns over time.

The Big Gay Out is held in an Auckland city park (just outside the inner city district), and all the bars and all but one of the saunas are located in this inner city district.

Respondents from gay bars (20.2%) and saunas/ sex-on-site venues (19.6%) were more likely to live outside of Auckland compared to those recruited at the Big Gay Out (11.2%), and these included men from other New Zealand cities as well as overseas visitors (Fig 8). Conversely, men recruited from the Big Gay Out and gay bars were more likely to live locally.

**Figure 8. Area of residence by site of recruitment (2008)**



Note: 'Not stated' not shown. P<0.001.

<sup>1</sup> Using census area unit definitions, the 'inner city district' is comprised of: Herne Bay, St Mary's Bay, Auckland Central, Ponsonby West, Ponsonby East, Freeman's Bay, Westmere, Grey Lynn West, Grey Lynn East, Newton, Grafton, Surrey Crescent, Arch Hill, Eden Terrace, Newmarket, and Kingsland (Hughes and Saxton, 2006).



## Sexual identity

When asked to use one descriptor, most respondents in the 2008 round identified as gay (84.5%), with 11.8% identifying as bisexual (Table 7). A very small proportion of respondents identified as “takataapui” (0.9%), “heterosexual” (0.2%), “fa’afafine” (0.3%), or “queer” (1.0%).

Table 7. Sexual identity by survey

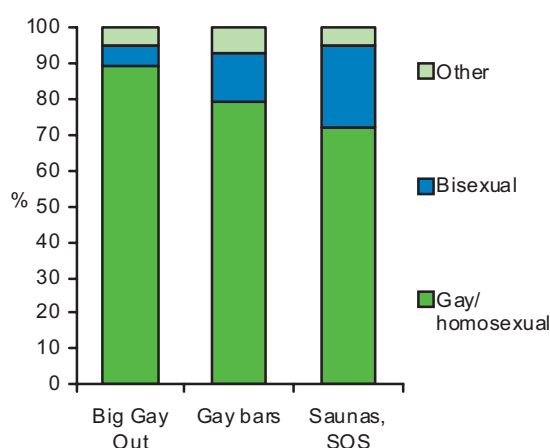
	2002		2004		2006		2008	
	n	%	n	%	n	%	N	%
Gay / homosexual	659	81.7	1050	86.4	1044	85.9	1287	84.8
Bisexual	82	10.2	126	10.4	112	9.2	179	11.8
Takataapui	14	1.7	6	0.5	13	1.1	14	0.9
Heterosexual	11	1.4	5	0.4	7	0.6	3	0.2
Fa’afafine	0	0.0	6	0.5	5	0.4	5	0.3
Queer	23	2.9	12	1.0	29	2.4	15	1.0
Other	18	2.2	11	0.9	5	0.4	14	0.9
Total	807	100.0	1216	100.0	1215	100.0	1517	100.0

Note: ‘Not stated’ = 5, 4, 13, 10 by round. P=ns over time (categories condensed into “gay”, bisexual” and “all other”).

There were significant differences between the sexual identities reported by men recruited at the three sites (Fig 9).

While 89.4% of men recruited at the Big Gay Out self-identified as gay or homosexual, this declined to 79.2% among men recruited at the gay bars and 72.2% among those recruited saunas/sex-on-site venues. A bisexual identity was most common among respondents recruited at the saunas/sex-on-site venues (23.1%), followed by respondents recruited at the gay bars (14.0%), and was only chosen by 5.8% of respondents at the Big Gay Out.

Figure 9. Sexual identity by site of recruitment (2008)



Note: ‘Not stated’ not shown. P<0.001.

## Amount of free time spent with gay men

Most men in 2008 reported spending “a lot” (44.7%) or “some” (32.1%) of their free time with gay men (Table 8). However, more than one in five (23.2%) reported that they only spent “a little” or “none” of their free time in the company of gay men. In 2008, as in 2006, fewer respondents compared to previous surveys reported spending “a lot” of time with gay men.

Table 8. Amount of free time spent with gay men by survey

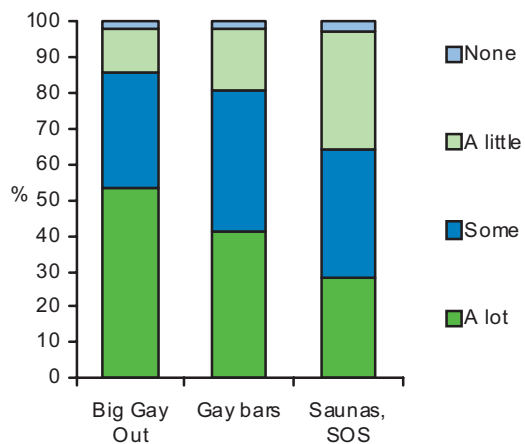
	2002		2004		2006		2008	
	n	%	n	%	n	%	N	%
None	19	2.4	12	1.0	31	2.6	37	2.6
A little	115	14.2	146	12.1	211	17.9	298	20.6
Some	264	32.6	436	36.1	407	34.6	464	32.1
A lot	411	50.8	615	50.9	527	44.8	647	44.7
Total	809	100.0	1209	100.0	1176	100.0	1446	100.0

Note: ‘Not stated’ = 3, 11, 52, 81 by round. P<0.001 over time.

There were statistically significant differences in the amount of free time spent with gay men according to site of recruitment (Fig 10).

While few men at any of the sites reported “none”, a third (33.2%) of men recruited from the saunas/ sex-on-site venues reported only spending “a little” time with gay men, compared to 17.9% of men recruited at gay bars and 11.9% of men recruited at the Big Gay Out. Over half (53.6%) of those recruited at the Big Gay Out spent “a lot” of their time with gay men, falling to 28% of men at the saunas.

**Figure 10. Free time spent with gay men by site of recruitment (2008)**



Note: 'Not stated' not shown. P<0.001.

### Workforce status

Most respondents in 2008 (86.1%) were employed at the time of survey. Only a few (3.0%) were unemployed and 2.3% were beneficiaries. Workforce status was first asked in the 2004 round and there have been no significant changes in the sample since then (Table 9).

**Table 9. Workforce status**

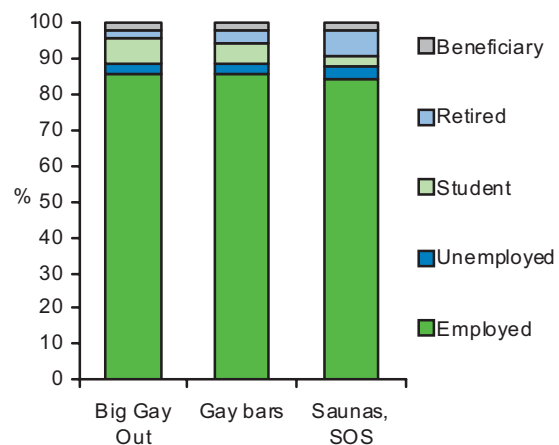
	2004		2006		2008	
	n	%	n	%	n	%
Employed	976	83.1	1009	86.8	1223	86.1
Unemployed	38	3.2	30	2.6	43	3.0
Student	94	8.1	69	5.9	83	5.8
Retired	48	4.1	32	2.8	41	2.9
Beneficiary	18	1.5	22	1.9	32	2.3
Total	1174	100.0	1162	100.0	1422	100.0

Note: 'Not stated' = 46, 66, 105 by round. P=ns over time.

There were statistically significant but only very small differences in workforce status according to site of recruitment (Fig 11).

The proportion who were currently retired was highest at the saunas/ sex-on-site venues, and the proportion who were students was highest at the Big Gay Out.

**Figure 11. Workforce status by site of recruitment (2008)**



Note: 'Not stated' not shown. P<0.001.



## | HIV testing and HIV status

### HIV testing

All respondents are asked if they had ever had an “HIV antibody test to detect infection with the virus that causes AIDS”.<sup>2</sup> Those who had tested in the past were asked when the last test was undertaken, where this occurred, and what the result was.

In 2008, 79.0% of those responding to the first question reported that they had tested for HIV at least once in their life. This was significantly higher than in 2006 (74.8%) and in all previous surveys (Table 10).

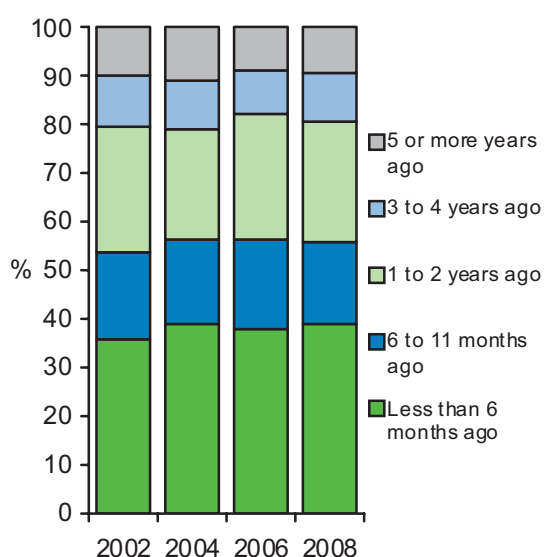
**Table 10. Ever tested for HIV by survey**

Ever had an HIV test	2002		2004		2006		2008	
	n	%	n	%	n	%	N	%
Yes	595	74.9	885	74.8	887	74.8	1151	79.0
No	199	25.1	299	25.3	299	25.2	306	21.0
Total	794	100.0	1184	100.0	1186	100.0	1457	100.0

Note: 'Not stated' = 18, 36, 42, 70 by round. P<0.01 over time.

Since HIV testing has been available in New Zealand since 1985, we also ask respondents when their last test was undertaken, because whether a man has ever tested for HIV may not provide useful information on patterns of recent HIV testing.

**Figure 12. Time since last HIV test by survey**



Note: 'Not stated' time of last test = 49, 68, 45, 66 by round.

Figure 12 shows the timing of the most recent HIV test among respondents who reported having tested at least once in their lifetime.

In 2008, 38.8% of those who had ever tested had last tested in the six months prior to survey, widening to 55.9% who had tested in the previous year.

Placing these data in the context of the whole 2008 sample who provided information on whether they had tested for HIV ever before and when this last test was, 45.2% had tested for HIV in the 12 months prior to survey. This was significantly higher than in previous rounds: 39.5% in 2002, 41.4% in 2004, and 41.7% in 2006.

<sup>2</sup> The question was worded in this way to avoid confusion with viral load tests, which measure the amount of HIV virus in an HIV positive person's bloodstream.

Figures 13-15 show how HIV testing behaviours can vary by certain characteristics of respondents. Here we look at age group, ethnicity and recent casual sex status.

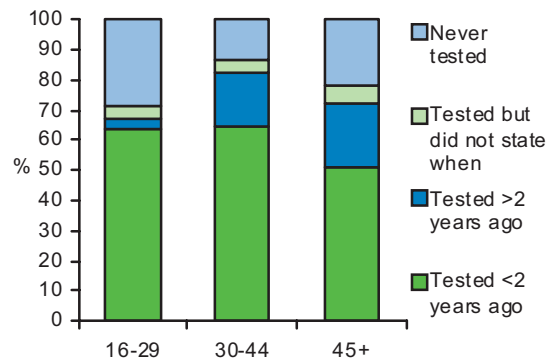
Figure 13 shows that while roughly equal proportions of men aged under 30 and aged 30-44 had tested for HIV in the last two years, a higher proportion of the younger age group had never tested for HIV (this is not necessarily more problematic; younger men may not have accumulated the same amount of risk practices over time compared to the older cohort).

Interestingly however, although respondents aged 45 and over have had more opportunities to access testing services over time, they were more likely to have never tested compared to respondents aged 30-44.

As Figure 14 shows, testing practices also varied by ethnicity. NZ European respondents were most likely to have tested for HIV at least once before, and Pacific respondents were least likely to have tested for HIV (this may be partly - but not wholly - due to a younger age profile among Pacific respondents). Conversely, respondents identifying as an Asian ethnicity were most likely to report having an HIV test in the last two years.

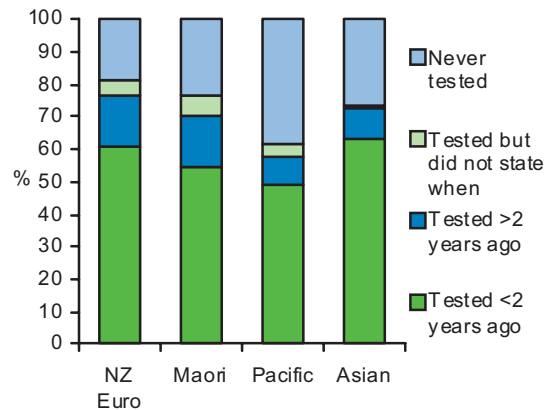
Figure 15 shows that recent casual sex was also associated with HIV testing. Those who had engaged in anal sex with a casual partner in the last six months were more likely to report having tested for HIV within the last two years compared to those who had not recently had casual anal sex. However, the finding that those reporting any unprotected anal sex were not more likely to have recently tested than those who had always used condoms with their casual partner/s is somewhat concerning.

**Figure 13. Timing of last HIV test by age group (2008)**



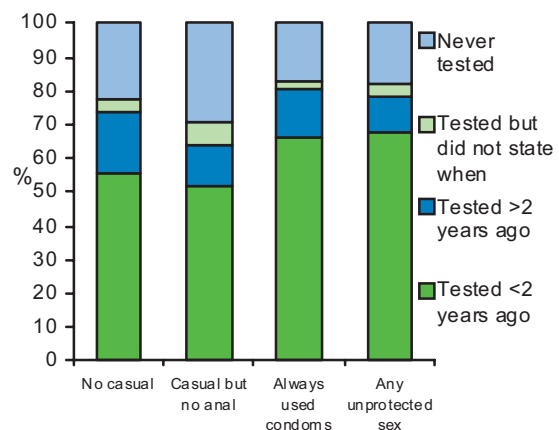
Note: 'Not stated' not shown. P<0.001.

**Figure 14. Timing of last HIV test by ethnicity (2008)**



Note: 'Not stated' not shown. P<0.05.

**Figure 15. Timing of last HIV test by casual sex status < 6 months (2008)**



Note: 'Not stated' not shown. P<0.001.

For the first time, respondents to the 2008 survey who had at least once tested for HIV were asked where their last test had occurred. Table 11 indicates that half (51.3%) had gone to a GP or a doctor for their last test, a third (34.0%) had their last test at a sexual health clinic, and around one in ten (9.4%) had gone to an NZAF clinic.

**Table 11. Site of last testing for HIV (2008)**

Where did you go for last HIV test	2008	
	n	%
GP or doctor	554	51.3
Sexual health clinic	367	34.0
NZAF clinic	102	9.4
Other	58	5.4
<b>Total</b>	<b>1081</b>	<b>100.0</b>

Note: 'Not stated' = 70.

### HIV status

Participants who stated they had tested for HIV at least once were asked the result of their last test, and also what they believed their HIV status was "at present". In the 2008 survey, 60 respondents had received an HIV positive test result. This represented 5.6% of the 1075 respondents who had tested and received their result, or 4.3% of the 1390 respondents who provided information on their testing history (Table 12). The proportion who had received an HIV negative test result (73.0%) was significantly higher in 2008 compared to previous years, largely due to the increase in the proportion who had ever tested for HIV in the 2008 sample.

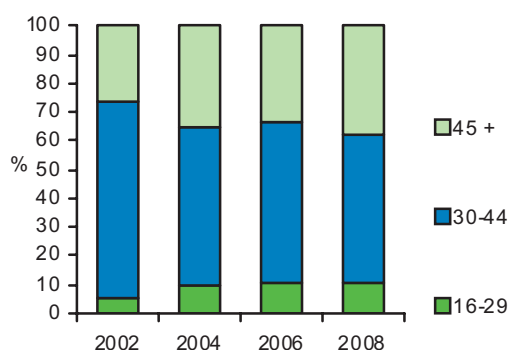
**Table 12. HIV test status by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	N	%
Tested HIV negative	514	67.9	756	67.7	799	69.8	1015	73.0
Tested HIV positive	38	5.0	53	4.8	40	3.5	60	4.3
Never tested / no result yet	205	27.1	307	27.5	306	26.7	315	22.7
<b>Total</b>	<b>757</b>	<b>100.0</b>	<b>1116</b>	<b>100.0</b>	<b>1145</b>	<b>100.0</b>	<b>1390</b>	<b>100.0</b>

Note: 'Not stated' testing history or last HIV test result = 55, 104, 83, 137 by round. P<0.01 over time.

It is important to remember that the proportion of respondents who had tested HIV negative will underestimate the actual proportion of MSM in the sample with HIV, since not all those with HIV infection will have tested since their last risk episode.

**Figure 16. Age group of respondents who had tested positive by survey**



Note: 'Not stated' age = 2 in 2004, 1 in 2006, 2 in 2008. P=ns.

In the 2008 survey, respondent who had tested HIV positive were most commonly aged 30-44 (51.7%), with 37.9% aged 45 and over and 10.3% aged under 30 (Fig 16).

The age distribution of men tested HIV positive was roughly the same over the last three surveys.

Participants' beliefs about their actual HIV status at the time of survey are displayed in Table 13. This shows the results from the 2004 survey onwards, and for each survey separates respondents by their HIV testing status (excluding those who had received an HIV positive test result).

**Table 13. Belief about current HIV status by test status and survey (non-tested +ve respondents)**

Respondent's belief about their own HIV status at present	2004				2006				2008			
	Tested HIV negative		Hasn't tested/ Don't know		Tested HIV negative		Hasn't tested/ Don't know		Tested HIV negative		Hasn't tested/ Don't know	
	n	%	n	%	n	%	n	%	n	%	n	%
Definitely HIV negative	503	67.3	179	60.9	552	69.4	187	63.2	745	74.6	181	62.0
Probably HIV negative	218	29.1	72	24.5	219	27.6	74	25.0	230	23.0	76	26.0
Probably HIV positive	1	0.1	5	1.7	1	0.1	2	0.7	0	0.0	0	0.0
Definitely HIV positive	2	0.3	4	1.4	1	0.1	3	1.0	2	0.2	3	1.0
Don't know	24	3.2	34	11.6	22	2.8	3	10.1	22	2.2	32	11.0
<b>Total</b>	<b>748</b>	<b>100.0</b>	<b>294</b>	<b>100.0</b>	<b>795</b>	<b>100.0</b>	<b>296</b>	<b>100.0</b>	<b>999</b>	<b>100.0</b>	<b>292</b>	<b>100.0</b>

Note: 'Not stated' = 8, 13; 4, 10; 14, 23 by HIV test status and round.

Looking first at the 2008 survey (Table 13), three-quarters (74.6%) of respondents who had last tested HIV negative currently believed they were "definitely negative" at the time of survey, with 23.0% believing they were "probably negative". Alternatively, proportionately fewer respondents in the 2008 survey who had never tested for HIV currently believed they were "definitely negative" (62.0%), with understandably more stating that they "don't know" (11.0%).

Next, looking across the 2004 - 2008 survey rounds (Table 13), beliefs about current HIV status were stable among those who had never tested for HIV (the proportion stating they were "definitely negative" ranging from 60.9% in 2004 to 62.0% in 2008). However, among those who had last tested HIV negative, proportionately more believed they were "definitely negative" in the 2008 round (74.6%) compared to men in previous rounds (67.3% in 2004 and 69.4% in 2006).

Figure 17 shows that among the 2008 survey respondents who had last tested HIV negative, certainty about being "definitely HIV negative" declined the longer ago their last HIV test was.

While 81.1% of those who had last tested negative within the last six months believed they were "definitely negative", this declined to 71.0% of those whose last negative test was 1-2 years ago, and to 64.6% among those whose last negative test was five or more years ago.

**Figure 17. Proportion believing they were currently "definitely HIV negative" at time of survey by time since last negative test (non-tested +ve respondents) (2008)**

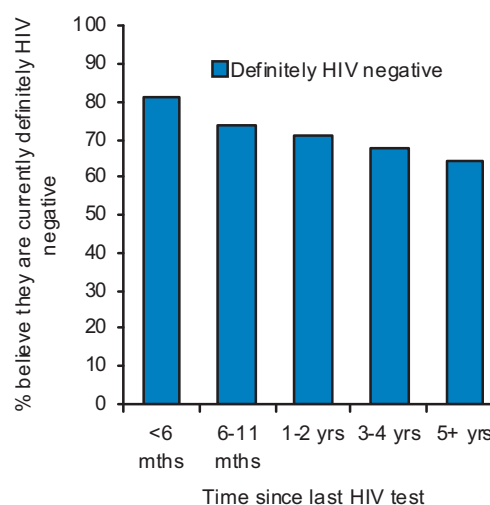
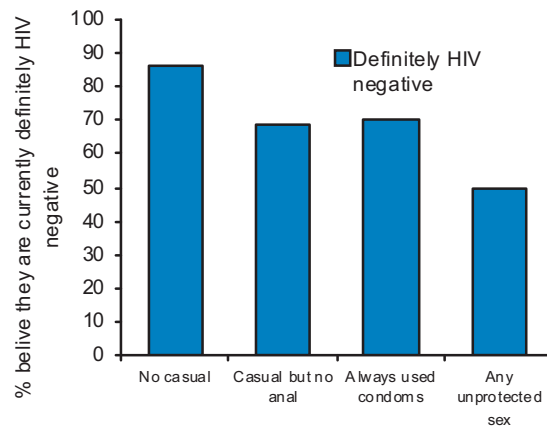


Figure 18 also shows how beliefs about current HIV status varied according to recent casual sex history.

Among the 2008 survey respondents who had not received an HIV positive result, the percentage who currently believed they were “definitely negative” ranged from 86.5% of those who had not had any casual sex in the six months prior to survey, 69.0% of those who had casual sex but no anal sex, 70.7% of those who had anal sex with a casual partner/s and always used a condom, to 49.3% of those who had at least one episode of casual anal sex without a condom in the last six months.

That half (49.3%) of respondents who had recently engaged in unprotected sex with a casual partner still believed they were “definitely negative” is a cause for concern, as not all of these men are likely to have tested negative for HIV since their last unprotected encounter.

**Figure 18. Proportion believing they were currently “definitely HIV negative” at time of survey by casual sex status < 6 months (2008)**



## | Sexual relationships

Like other sexually transmitted infections (STIs), ongoing HIV transmission in a given population is only sustained if a number of key epidemic determinants are present. One of these determinants is the pattern of sexual contacts in a population, which includes factors such as the rate of new sexual partner formation, the length and frequency of contact within different types of sexual relationships, whether relationships tend to overlap, and who “mixes” sexually with whom. As HIV is generally less infectious than other STIs, it conversely requires a certain (higher) level of “sexual connectivity” among its constituents if spread is to be viable (Saxton 2009).

Whereas the monitoring of behaviours for HIV prevention rightly focuses on condom use, condom use occurs “on top” of the underlying patterns of sexual contact and sexual relationships. The complexity of, and patterns in, sexual relationships between men should therefore also be a component of monitoring if our understanding of epidemic trends is to be improved (Saxton et al. 2008).

The GAPSS questionnaire included definitions of several key concepts. The term “sex” was defined as meaning “any physical contact that you felt was sexual”. The definitions of casual and regular sex partners given differentiated between the partner types by the quantity of sexual interaction as opposed to the emotional nature of the relationship:

*Casual sex partners: men you’ve had sex with once, twice or three times in the last 6 months*

*Regular sex partners: men you’ve had sex with 4 or more times in the last 6 months. They could be boyfriends, life partners, fuckbuddies etc...*

Respondents were then asked how many regular male sexual partners they had had sex with in the six months prior to survey, whether they currently had a regular male partner at the time of survey, how long they had been in a regular relationship with the current partner, whether they currently lived with this partner, and what best described the nature of their relationship (e.g. boyfriend or fuckbuddy). If a respondent currently had more than one regular male partner, they were asked to focus on the regular partner they had the most sex with.

### ***Number of sexual partners in the last six months***

Almost equal proportions of respondents to the 2008 survey reported having 2-5 male sexual partners in the last six months (31.2%) or just one sexual partner (29.7%) (Table 14). One in ten (9.8%) among the 2008 sample reported more than 20 male sexual partners recently, which was proportionately fewer than in previous surveys (16.9%, 14.2%, 11.9% in 2002-2006 respectively).

**Table 14. Number of male sexual partners in the previous six months by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
None	42	5.2	85	7.1	49	4.1	68	4.6
One	177	22.1	302	25.1	322	26.9	435	29.7
2 to 5	239	29.8	352	29.2	987	32.3	458	31.2
6 to 10	121	15.1	165	13.7	172	14.4	227	15.5
11 to 20	87	10.9	129	10.7	126	10.5	136	9.3
21 to 50	91	11.4	119	9.9	100	8.4	98	6.7
More than 50	44	5.5	52	4.3	42	3.5	45	3.1
Total	801	100.0	1204	100.0	1198	100.0	1467	100.0

Note: 'Not stated' = 11, 16, 30, 60 by round. P<0.001.

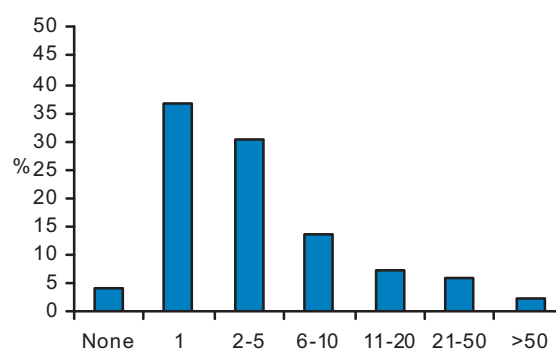
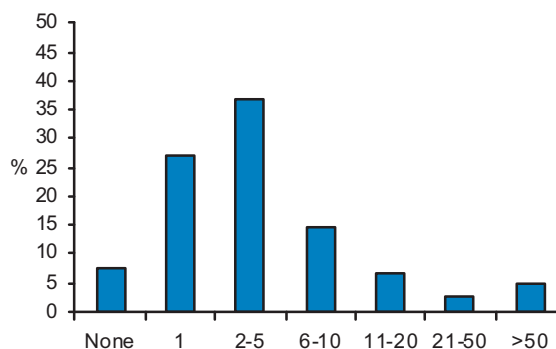
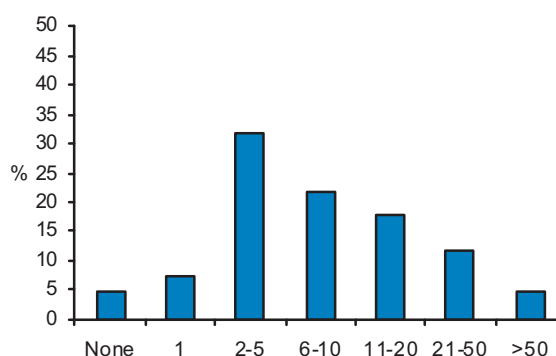
Figures 19-21 show how the number of recent male sexual partners varied between respondents recruited at the three types of venues.

Respondents from the Big Gay Out (Fig 19) were most likely to report just one male sexual partner in the previous six months, closely followed by 2-5 sexual partners. Around 1 in 12 respondents (8.2%) from the Big Gay Out reported having more than 20 sexual partners.

Respondents recruited from gay bars (Fig 20) were most likely to report 2-5 sexual partners, followed by one sexual partner, but otherwise were just as likely to report over 20 partners in the previous six months (7.4%) as respondents from the Big Gay Out.

A different profile of recent sexual partnering was reported by men recruited from gay saunas and sex-on-site venues (Fig 21). As with the bar sample, these men were most likely to report 2-5 recent sexual partners, but were more likely to report 6-10, 11-20 and 21-50 partners than men recruited at the other venues. Unsurprisingly, respondents from the gay saunas/sex-on-site venues were the most to report over 20 recent partners (16.3%).

In the 2008 survey, 8.7% of respondents also reported having had sex with a woman in the past six months, similar to previous rounds (9.3%, 6.6%, 6.9% in 2002-06 respectively).

**Figure 19. Number of male sexual partners in the previous six months, Big Gay Out sample (2008)****Figure 20. Number of male sexual partners in the previous six months, gay bar sample (2008)****Figure 21. Number of male sexual partners in the previous six months, saunas/ sex-on-site sample (2008)**



## Types of sexual relationships over the previous six months

Table 15 and Figure 22 combine the responses to a number of questions on casual and regular sex partners to show the different relationship contexts men reported in the past six months.

**Table 15. Types of sexual relationships with men over the previous six months by survey**

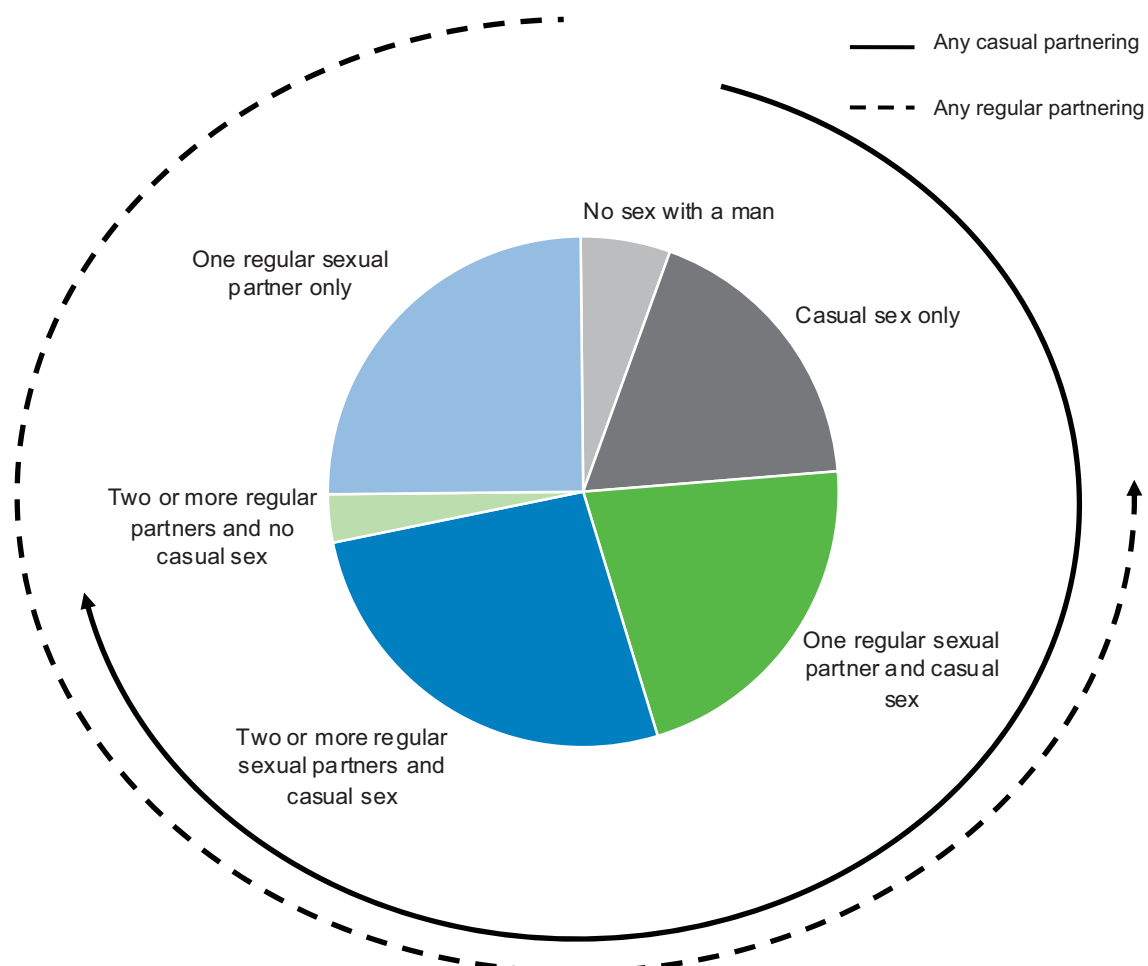
	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No sex with a man	42	5.6	85	7.4	51	4.5	78	5.6
One regular sex partner only	164	22.0	257	22.4	282	24.9	356	25.4
Two or more regular sex partners and no casual sex	20	2.7	32	2.8	28	2.5	42	3.0
One regular sex partner and casual sex	183	24.6	250	21.8	257	22.7	302	21.5
Two or more regular sex partners and casual sex	187	25.1	338	29.5	321	28.3	369	26.3
Casual sex only	149	20.0	185	16.2	194	17.1	257	18.3
Total	745	100.0	1147	100.0	1133	100.0	1404	100.0

Note: 'Not stated' = 67, 73, 95, 123 by round. P=ns.

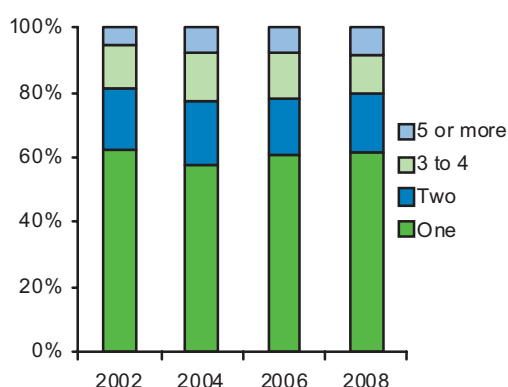
Table 15 indicates that the general pattern in the types of sexual relationships has remained the same among the GAPSS samples over time.

The complexity of sexual partnering combinations over a six month period is illustrated more clearly in the pie chart below of the GAPSS 2008 sample.

**Figure 22. Sexual relationships with men over the previous six months (2008)**





**Figure 23. Number of regular male partners over the previous six months by survey**

Note: Only includes men who reported at least one regular sex partner in the previous six months.

Most the men in 2008 who reported at least one regular sexual partner over the previous six months had just one regular sex partner (Fig 23), however around 40% reported more than one.

There were no significant changes over time in the number of regular sexual partners reported by respondents.

### Current regular sex partner

For men reporting any regular partners in the previous six months, the GAPSS survey focused questions about sexual practices, protective behaviours and HIV test status on a respondent's *current* regular sex partner. Respondents with multiple current regular sexual partners were asked to focus on the partner who they had the *most* sex with.

In 2008, 1080 respondents had engaged in sex with a regular sex partner over the six months prior to survey. Of those, 801 respondents, or 54.6% of the total 2008 GAPSS sample who provided information, reported having a regular sex partner at the time of survey (Table 16).

**Table 16. Men reporting current regular male sexual partner by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Current regular sexual partner	398	51.0	668	55.5	658	55.9	801	54.6
No current regular sexual partner	383	49.0	535	44.5	520	44.1	667	45.4
Total	781	100.0	1203	100.0	1178	100.0	1468	100.0

Note: 'Not stated' = 31, 17, 50, 59 by round. P=ns.

Men described their current regular sexual partners in different ways (Table 17). In 2008, 78.3% described this person as a "boyfriend, long-term lover, life partner, or civil union partner" and 21.7% described this person as a "fuckbuddy or friend I have sex with" (21.5%). The types of current regular relationships were stable over time (Table 17).

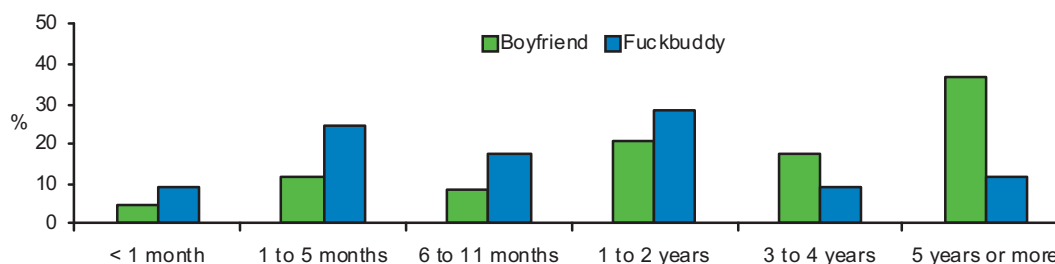
**Table 17. Description of current regular partner by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
"Boyfriend, long-term lover, life partner, civil union partner"	300	78.1	504	79.5	477	77.1	591	78.3
"Fuckbuddy, friend I have sex with"	81	21.1	128	20.2	142	22.9	164	21.7
Someone I pay to have sex with	3	0.8	2	0.3	-	-	-	-
Total	384	100.0	634	100.0	619	100.0	755	100.0

Note: 'Not stated' = 14, 34, 39, 46 by round. Paying for sex not included in 2006 survey. P=ns.

Well over a third (36.5%) of current “boyfriend”-type relationships were five or more years in duration, with a quarter (25.2%) of these current relationships being less than a year in length at the time of survey (Fig 24). Conversely, “fuckbuddy”-type relationships tended to be newer, with 11.6% having lasted for five or more years and half (51.2%) being less than a year long at the time of survey.

**Figure 24. Length of current regular sexual relationship by type of relationship (2008)**



Note: 'Not stated' relationship length = 4, 0 by relationship type.

Almost three-quarters (73.6%) of respondents who described their current regular sexual partner as a “boyfriend” lived with this person at the time of survey, while this was true for just 6.2% of respondents when asked about their “fuckbuddy”-type relationships.

### **Current Regular Partner's HIV Testing**

Respondents with a current regular male sex partner were asked what the result of his latest HIV test was. Discussions or assumptions about a regular partner's test status may differ between men who have themselves tested positive and those who have not, thus the results presented in Table 18 to Table 20 below are limited to respondents who have not tested positive.

Most respondents in the 2008 survey stated that their current regular partner had last tested HIV negative (70.7%). (Note that GAPSS does not collect information on how long ago their partner's last negative test was, and therefore what HIV risk episodes may have occurred since then. Nor do we know whether a respondent's recollection of a partner's HIV testing history is accurate). One in five (20.3%) respondents stated that they didn't know what their current regular partner's HIV test status was, while 1.9% reported that it was HIV positive (Table 18). These patterns in a regular partner's test status were stable over time (Table 18).

**Table 18. HIV test status of current regular partner by survey (non-positive respondents)**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Don't know / haven't asked him	65	18.0	143	23.3	132	21.5	150	20.3
He hasn't had a test	50	13.8	49	8.0	44	7.2	53	7.2
His last test was HIV negative	241	66.6	406	66.0	420	68.4	523	70.7
His last test was HIV positive	6	1.7	17	2.8	18	2.9	14	1.9
<b>Total</b>	<b>362</b>	<b>100.0</b>	<b>615</b>	<b>100.0</b>	<b>614</b>	<b>100.0</b>	<b>740</b>	<b>100.0</b>

Note: 'Not stated' = 12, 27, 24, 25 by round. P=ns.

Figure 25 shows how a respondent's understanding of their current regular partner's HIV testing history is influenced by the nature of the regular relationship.

Three-quarters (76.4%) of the 2008 survey respondents who described their current partner as a "boyfriend" stated that this person had last tested HIV negative, whereas this was true for 53.3% of those whose current regular partner was described as a "fuckbuddy". In contrast, 39.0% of the latter respondents stated that they "didn't know" or "hadn't asked".

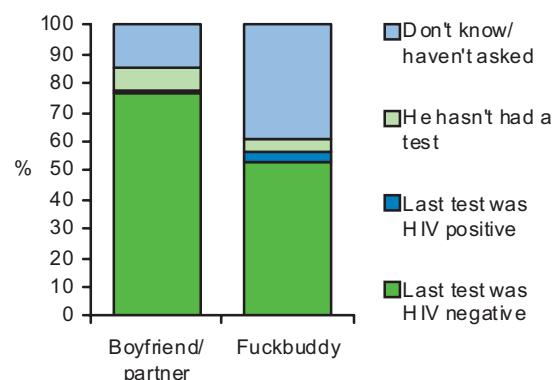
Respondents were also asked what they *believed* their current regular partner's actual HIV status was. Table 19 and Table 20 break this down first by the type of current regular relationship, and then by respondents' understanding of their partner's HIV test status.

Table 19 shows that respondents were most likely to believe that their current boyfriend was "definitely HIV negative" if they thought this person had last tested negative (87.7%), than if they thought he hadn't tested for HIV (79.1%) or the respondent hadn't asked (61.0%).

Respondents were overall less likely to believe that their fuckbuddy partner was "definitely

HIV negative" compared to respondents with boyfriend-type relationships, regardless of their understanding of their fuckbuddy's HIV testing history (Table 20). For example, just 26.7% of respondents who hadn't asked their current fuckbuddy about their HIV testing history believed that this person was "definitely HIV negative", compared to 61.0% of the respective group with boyfriend-type partners. Further, among respondents who thought that their partner had last tested HIV negative, those with a current fuckbuddy were less likely to believe this person was "definitely HIV negative" (75.0%) compared to those with a current boyfriend-type partner (87.7%).

**Figure 25. HIV test status of current regular sex partner by type of partner, among non +ve respondents (2008)**



Note: 'Not stated' not shown.

**Table 19. Respondent's belief about regular "boyfriend-type" partner's actual HIV status by partner's last HIV test status (non +ve respondents) (2008)**

Respondent's belief about regular partner's actual HIV status	Regular Boyfriend Partner's Test History					
	Don't know /haven't asked		He hasn't tested		Last tested HIV negative	
	n	%	n	%	n	%
Definitely HIV negative	48	61.0	34	79.1	372	87.7
Probably HIV negative	25	31.7	9	20.9	45	10.6
Probably HIV positive	1	1.2	0	0.0	1	0.2
Definitely HIV positive	0	0.0	0	0.0	3	0.7
Don't know	5	6.1	0	0.0	3	0.7
<b>Total</b>	<b>79</b>	<b>100.0</b>	<b>43</b>	<b>100.0</b>	<b>424</b>	<b>100.0</b>

Note: 'Not stated' = 0, 1, 0 by round.

**Table 20. Respondent's belief about regular "fuckbuddy-type" partner's actual HIV status by partner's last HIV test status (non +ve respondents) (2008)**

Respondent's belief about regular partner's actual HIV status	Regular Fuckbuddy Partner's Test History					
	Don't know /haven't asked		He hasn't tested		Last tested HIV negative	
	n	%	n	%	n	%
Definitely HIV negative	16	26.7	4	57.1	60	75.0
Probably HIV negative	24	40	3	42.9	16	20.0
Probably HIV positive	0	0.0	0	0.0	0	0.0
Definitely HIV positive	0	0.0	0	0.0	1	1.3
Don't know	20	33.3	0	0.0	3	3.8
Missing						
<b>Total</b>	<b>60</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>	<b>80</b>	<b>100.0</b>

Note: 'Not stated' = 0, 0, 2 by round.

If we combine information on respondents' understanding of their current regular partner's HIV test status, with information on the respondent's own last HIV test status, the degree of *possible* sero-concordance (having the same HIV status) with current regular partners can be determined (Table 21).

It is important to note that we are not able to establish the *actual* level of sero-concordance. This is because a respondent's assessment of their partner's HIV test status may not be correct, and the respondent may not be aware of an undiagnosed HIV infection concerning themselves or their partner, especially if either (or both) have engaged in unprotected anal sex since their last negative test.

**Table 21. Possible sero-concordance with current regular sex partner (2008)**

Regular partner's last HIV test status	Respondent's own latest HIV test status					
	Unknown		HIV Negative		HIV Positive	
	n	%	n	%	n	%
HIV status unknown*	62	50.8	123	21.9	7	19.4
Last test was HIV negative	59	48.4	426	75.8	16	44.4
Last test was HIV positive	1	0.8	13	2.3	13	36.1
<b>Total</b>	<b>122</b>	<b>100.0</b>	<b>562</b>	<b>100.0</b>	<b>36</b>	<b>100.0</b>

\* Combination of "unknown/haven't asked him" and "he hasn't had a test". Only includes men who had a current regular sex partner and who provided information on their own HIV test history. 'Not stated' = 6, 14, 0 by round.

Table 21 shows that 75.8% of respondents who had themselves last tested HIV negative, stated that they understood their current regular partner had also last tested HIV negative. We can then categorise these 426 individuals as "possibly negative concordant", and these appear in the first row of Table 22.

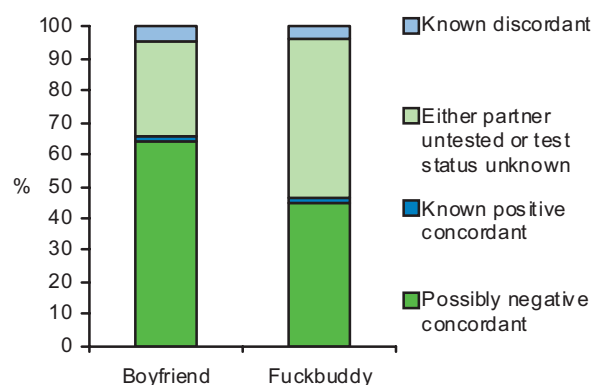
Similarly, of the respondents with a current regular partner and who had themselves tested HIV positive previously, over a third (36.1%) stated that this regular partner was also HIV positive. These 13 individuals can be categorised as "known positive concordant" in Table 22. The remaining respondents in Table 21 are allocated as either "known discordant" (positive – negative or negative – positive), or as "either unknown or untested" in Table 22.

Figure 26 then shows how the possible sero-concordance table looks if broken down by regular relationship type. Possible negative concordance was highest among boyfriend-type partnerships, whereas lack of knowledge of possible HIV test concordance was highest among fuckbuddy partnerships.

**Table 22. Possible sero-concordance with current regular sex partner, consolidated (2008)**

	2008	
	n	%
Possibly negative concordant	426	59.2
Known positive concordant	13	1.8
Either partner untested or test status unknown	252	35.0
Known discordant	29	4.0
<b>Total</b>	<b>720</b>	<b>100.0</b>

**Figure 26. Possible sero-concordance by type of current regular partner, consolidated (2008)**



Note: 'Not stated' not shown.

## Concurrent sexual partnering

Some men, and couples, have sex with other men in addition to their current regular partner. Sometimes this is because men might have several regular sexual partners, or sex with other men can happen around the time a relationship is still beginning to form.

Overlapping, simultaneous or “concurrent” relationships present risks for the transmission of HIV in certain conditions. When unprotected anal sex occurs, concurrent relationships create connections between individuals that facilitate the rapid spread of HIV, because they increase the number of individuals the virus is able to infect in a relatively short space of time (Morris and Kretzschmar, 1997). This is especially true if someone in a sexual network has recently been infected with HIV and is in the “acute phase”, when HIV infectivity is at its highest and the individual is also unlikely to know they have been infected. At a personal level, overlapping relationships allow HIV entry into a sexual partnership, even when one of the individuals has not acquired any new sexual partners other than their current one.

The GAPSS study can examine concurrent sexual partnering by identifying those who reported currently being in a relationship with a regular partner for “six months or more”, and then by investigating whether they had reported any other regular or casual partners during this six month period.

In 2008, 605 respondents with a current regular partner had been together for at least six months (79.7% of all those with a current partner). Table 23 shows the results for concurrent sexual partnering among this group.

**Table 23. Concurrent sexual partnering among respondents with current regular partner of at least six months duration by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No other partners <6 mths	116	42.2	206	42.9	219	45.8	279	47.2
Concurrent casual partners only	86	31.3	134	27.9	133	27.8	149	25.2
Concurrent regular partners only	5	1.8	11	2.3	11	2.3	19	3.2
Both concurrent casual and regular partners	68	24.7	129	26.9	114	23.9	144	24.4
Total	275	100.0	480	100.0	477	100.0	591	100.0

Note: 'Not stated' = 9, 14, 11, 14. P<0.05 for combined concurrency outcomes. Only those with a current regular partner of at least six months duration are included in the Table above.

Overall in 2008, these 312 respondents who had concurrent sexual partnerships in the six month period prior to survey represent 52.8% of all those with a regular partnership of at least six months duration. This is slightly lower than found in previous surveys (57.8% in 2002, 57.1% in 2004, 54.1% in 2006).

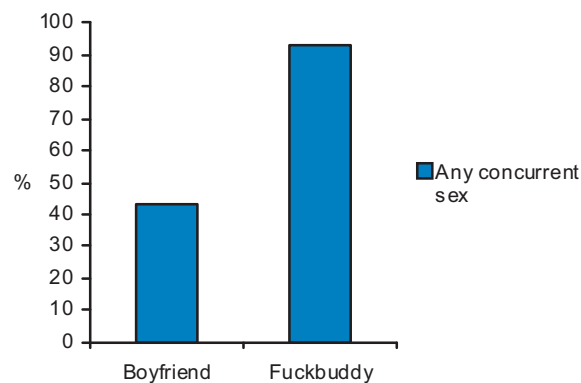
Figure 27 shows that the rate of concurrent sex by the respondent in the previous six months differed by the type of current regular relationship the individual was in.

Among respondents with boyfriend-type current regular relationships of at least six months duration, 43.6% had engaged in any concurrent sex in the preceding six month period. However, this was true for almost all of those who described their current regular partner as a “fuckbuddy” (93.2%).

As stated above, concurrent sexual partnering in GAPSS can only be determined among a portion of the whole sample— those who had regular sexual relationships of at least six months length. It is not possible for GAPSS to determine concurrent sex in the previous six months for those in relationships for less than six months duration, since this could falsely identify multiple partnerships as concurrent when in fact they may be sequential partnerships that never overlapped.

Also, men having only casual sex (defined as sex with a man up to a maximum of three times in a six month period) may also experience concurrent casual partnering, but we are unable to explore this. This means that the actual rates of concurrent sex will be higher than those reported here for any given six month period, and of course will inevitably rise if the period over which concurrent sex is measured is extended to a year or a lifetime.

**Figure 27. Any concurrent partnering in last six months by type of regular relationship, among respondents in regular relationships of at least six months duration (2008)**



Note: 'Not stated' not shown.





## Internet dating and personal profiles

### Had sex with a man met on the Internet in the last six months

The GAPSS programme has asked about sexual partners acquired through the Internet since the first survey in 2002. Since 2006, the GOSS online survey (not reported here) has also gone into more depth regarding the use of the Internet for dating, such as the frequency of looking for partners online, and how much time was spent searching sites for sex. In 2008, the GAPSS offline survey extended questions surrounding Internet dating through a series of items on online personal profiles. The results from the GAPSS items are summarised below.

All respondents in 2008 were asked whether in the last six months they had had sex with a man they met on the Internet. Table 24 below shows that there was a large increase in the proportion of respondents who had done this between the 2002 and 2004 surveys (from 26.6% to 44.8%), and this proportion has been consistent since then (44.5% of respondents in the 2008 survey had sex with a man they had met online in the six months prior to survey).

**Table 24. Sex with a man the respondent had met via the Internet in previous six months by survey**

	2002		2004		2006		2008	
	n	%	N	%	n	%	n	%
Yes	204	26.6	513	44.8	470	41.7	644	44.5
Not in the <6 mths / no sex with a man <6 mths	562	73.4	633	55.2	658	58.3	803	55.5
Total	766	100.0	1146	100.0	1128	100.0	1447	100.0

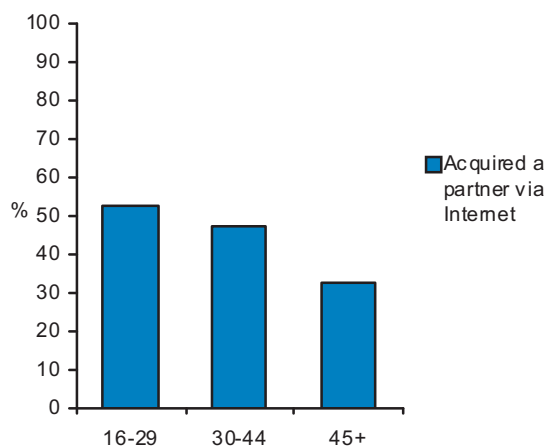
Note: 'Not stated' = 46, 74, 100, 80 by round. P<0.001.

As in previous surveys, acquiring a sexual partner via the Internet in the previous six months differed significantly according to age group (Fig 28).

Just over half of respondents aged 16-29 (52.5%) had had sex with someone they met via the Internet in the previous six months, compared to 47.3% of men aged 30-44 and 32.7% of those aged 45 and over.

Comparing these results to the baseline 2002 results, respondents of all ages appeared to have increased their use of the Internet for dating to a similar extent. In the 2002 survey, 31.5% of respondents aged under 30, 28% of those aged 30-44, and 14.3% of those aged 45 and over had had sex with a man met online.

**Figure 28. Sex via the Internet in last six months by age group (2008)**

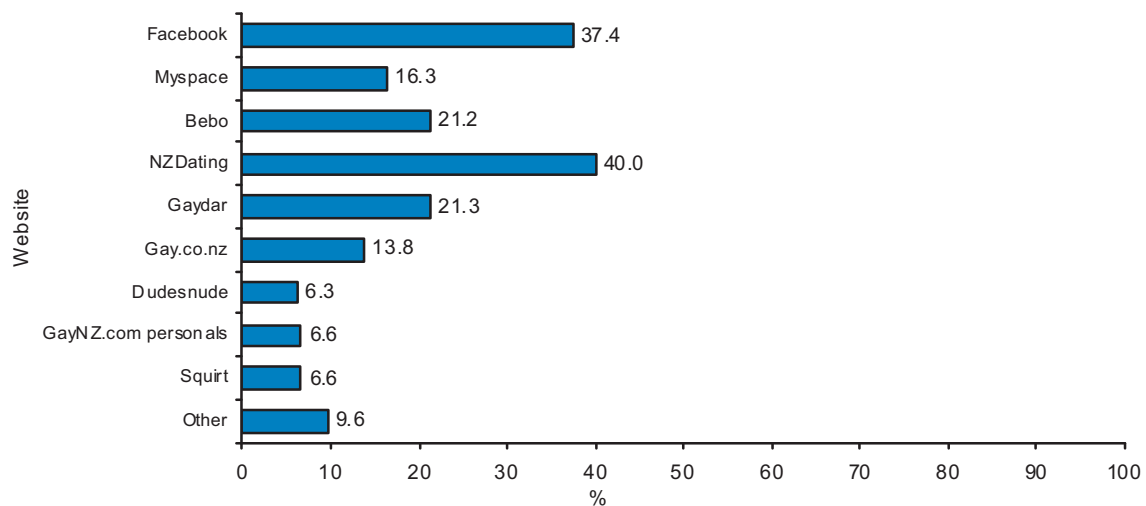


Note: 'Not stated' not shown. P<0.001.

## Personal profiles at the time of survey

In 2008, the GAPSS survey asked respondents about their use of online personal profiles. The question posed was “do you have an *active* personal profile on any of the following Internet sites?”, followed by a list of possible sites as well as an open write-in category of “other – please state”. Fig 29 shows the results from this question in the order they were asked.

**Figure 29. Active personal profile on this site at the time of survey (2008)**



Note: 'Not stated' = 111, 117, 117, 101, 115, 123, 124, 126, 125, 213 by website, descending.

In 2008, Facebook was by far the most popular “social networking” site to have a personal profile on, with 37.4% of respondents stating they current had an “active” one on there. This was followed by Bebo (21.2%) and Myspace (16.3%). Of the “sexual networking” sites, NZDating was the most common with 40.0% of respondents stating they currently used this. Around one in five respondents (21.3%) stated they had a Gaydar profile, and 13.8% had a profile on Gay.co.nz. Dudesnude, GayNZ.com personals and Squirt were each used by just over 6% of participants. One in ten respondents (9.6%) chose to write-in at least one “other” site, and the open-ended responses to this question are listed below, with the number of respondents citing it in parentheses.

Asian friendfinder (1)	Cruisingforsex (1)	NZgaychat.com (1)	Pozpersonals (1)
BUV (1)	Dlist (1)	Guypower (1)	Silver Daddies (10)
Hi5 (1)	Findsomeone (2)	Thegyc.com (1)	Qcruiser.com (1)
NZ Herald Connexions (1)	Flickr (2)	Large penis support group (1)	Recon.com (4)
Pinkboard (1)	Fotolog (1)	Leather world (2)	Socketstars.co.uk (1)
Adam4Adam (3)	Fridae (7)	Livejournal.com (1)	Tribe.net (1)
Adultfriendfinder (1)	Friendster (1)	Manhunt (8)	Wordfist.co (1)
Alt.com (1)	Gay Romeo (6)	Manjam (2)	Worldleathermen.com (2)
Bear4all (4)	Gay.com.au (2)	Match.com (1)	Worldskins.com (2)
Bearwww (5)	Gay.com (8)	NZ Personals (3)	Xtube (1)
Bigmusclebears (5)	Gearfetish (1)	Scandals (1)	Yahoo (1)
Caffmos community (1)	Guy4guys.com (1)	Outpersonals (1)	Youtube (3)



## Sources of new sexual contacts

A new question was included in 2008 on whether a respondent had formed any *new* sexual contacts in the six months prior to survey (i.e. any casual or regular male sexual partners whom the respondent had not had sex with earlier than six months ago).

Those who stated they had were presented with a list of possible settings (e.g. gay bar or nightclub) and were invited to indicate the number of new sexual contacts they had met at that type of place (e.g. “gay bar or nightclub – 2”). The purpose of this question was to gauge both the proportion of respondents who had recently met a new sexual partner at a given venue type, and also the proportion of all new sexual contacts made by the 2008 sample through a given site.

As Table 25 shows, Around 60% (59.7%) of the 2008 sample indicated that they had met a new sexual partner in the six months prior to survey.

**Table 25. Made a new sexual contact in the six months prior to survey (2008)**

	2008	
	n	%
Yes	795	59.7
No	536	40.3
Total	1331	100.0

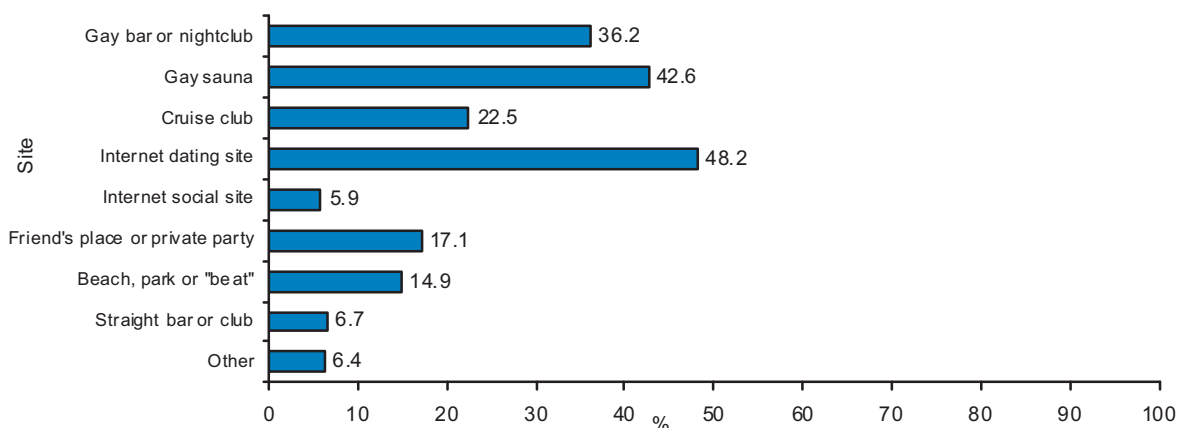
Note: 'Not stated' = 196.

When invited to state the number of new sexual contacts they had made at various sites in the previous six months, a large proportion of respondents placed “ticks” beside the listed

sites rather than wrote in the number of men they had met there (the instructions on the questionnaire to put numbers may not have been sufficiently clear, or may not have been read). Of the 795 respondents who had met a new sexual contact in the last six months, 198 (or 24.9% of 795) placed ticks for all or at least some of the sites inquired about.

As we are interested in the both the popularity of certain sites for *any* partner acquisition, but also the *fraction of all new sexual contacts* made at given sites, we therefore restricted the analysis of findings below to the approximately 75% of respondents with new sexual contacts who had written in the number of men they met.

**Figure 30. Proportion of those reporting a new sexual contact in the last six months who had met at least one of these partners at this site (2008)**

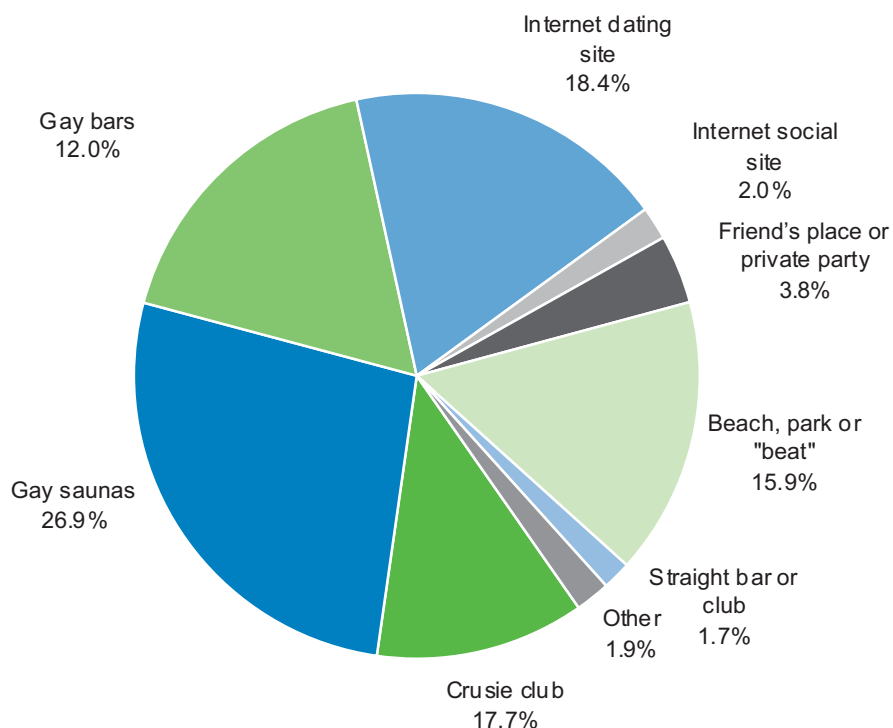


Hence, Figure 30 (previous page) shows the proportion of these respondents who indicated they had met at least one new sexual partner at the site listed. Around half (48.2%) of all respondents who had recently met a new sexual partner had met someone through an Internet dating site, such as NZDating.com. Proportionately fewer had met a new contact at a gay sauna (42.6%) and at a gay bar or nightclub (36.2%).

Figure 31 then expresses the attributable fraction of all new sexual contacts made by respondents in the six months prior to survey for each of the sites listed. This is done by calculating the total number of new sexual contacts reported for a given site, and dividing this by the total number of all new sexual contacts reported at all the sites combined.

For example, a total of 4856 new sexual contacts were reported by respondents at all the listed sites. As 582 new contacts were listed by respondents as having been made at a gay bar or nightclub, we are able to deduce that 12.0% of all new sexual contacts made by this sample were acquired at gay bars or nightclubs over this period. Thus, while 36.2% of respondents had made at least one new sexual contact at this type of site (Fig 30), just one-eighth of the total *volume* of new contacts were generated there.

**Figure 31. Proportion of all new sexual contacts found at a given site by respondents (2008)**



It is important to remember that these results are unlikely to represent the actual volume of new sexual contacts attributable to each site type for all MSM in Auckland, as the GAPSS recruitment strategy selectively invites participants from certain types of venues such as bars, saunas and cruse clubs. These results therefore need to be interpreted carefully in conjunction with the same data collected online in 2008 (the GOSS survey). Consideration should also be given to examining the results for each of the offline recruitment sites in 2008.

## | Knowledge about HIV and safe sex

Questions about a respondent's knowledge of HIV and safe sex issues were asked for the first time in the GAPSS project in 2006, and four of these items were followed up in 2008.

The knowledge items in the questionnaire appeared as a series of statements with a heading informing the participant that "the following statements are all TRUE. Please indicate whether you knew this or not". Response categories offered were "I knew that", "I didn't know that" and "I wasn't sure". As with all the GAPSS questions, the self-completed and anonymous format for participating in the survey should reduce social desirability biases that may have been stronger if respondents had had to disclose this verbally to an interviewer, or if responses could be linked back to identifiable individuals. Inquiring about knowledge of HIV and safe sex through a sequence of true statements also has the advantage of imparting or reinforcing knowledge through the process of taking part in the survey.

The results for the four repeated knowledge items are shown below in Table 26.

**Table 26. Knowledge about HIV and safe sex (2008)**

		2006		2008	
		n	%	n	%
Anal sex without a condom is very high risk for HIV transmission	I knew that	1166	98.8	1424	98.1
	I wasn't sure	10	0.9	21	1.5
	I didn't know that	4	0.3	7	0.5
Oral sex is low risk for HIV transmission	I knew that	995	84.5	1195	82.6
	I wasn't sure	153	13.0	203	14.0
	I didn't know that	30	2.6	48	3.3
HIV is more easily transmitted to others in the first few weeks after infection	I knew that	493	41.9	617	42.8
	I wasn't sure	273	23.2	397	27.5
	I didn't know that	412	35.0	428	29.7
HIV cannot pass through an undamaged latex condom	I knew that	974	82.7	1157	80.3
	I wasn't sure	141	12.0	192	13.3
	I didn't know that	63	5.4	92	6.4

Note: 'Not stated' for 2006, by item, descending = 48, 50, 50, 50; for 2008 = 75, 81, 85, 86. P=ns over time for all items.

There were no statistically significant changes in respondents' knowledge between 2006 and 2008 for the items asked. As in 2006, almost all respondents in 2008 knew that unprotected anal sex was high risk for HIV infection (98.1%). Proportionately fewer knew that oral sex was low risk for HIV transmission (82.6%), although most of the remainder were unsure of this (14.0%) rather than unaware (3.3%).

The least-known knowledge item related to the highly infectious early acute phase of HIV. This lasts from a few weeks to a few months, when HIV viral load is very high prior to the immune system mounting its initial response. Just over two out of every five respondents knew this (42.8%), with many respondents (29.7%) being completely unaware.

Four out of five (80.3%) knew that HIV couldn't penetrate an intact latex condom. Again, of those who didn't profess to know this, most were unsure (13.3%) as opposed to being unaware (6.4%).

## | Attitudes

All respondents were asked how they felt about eight statements regarding HIV, condom use and sex. Five were repeated from 2006, one was repeated for the first time since the first survey in 2002, and two were new to 2008. Participants were invited to “strongly agree”, “agree”, “disagree”, or “strongly disagree” with each one.

The two new items in the 2008 survey were “sometimes I feel under pressure not to use a condom”, and “in the last year I’ve seen safe sex messages that were relevant to me”. The first of these was intended to capture a wide variety of direct, interpersonal and indirect, cultural pressures to discard condoms, and it can be used both as a tracking question over time, and to examine variations in response to this item by respondent characteristics. The second item attempts to gauge both the reach and perceived relevance of recent HIV health promotion messages designed for men who have sex with men in New Zealand.

Comparisons over time are displayed in the Tables, and the Figures simplify these data by illustrating the proportion of respondents in the combined categories of “agreed/strongly agreed” or “disagreed/strongly disagreed” by survey round.

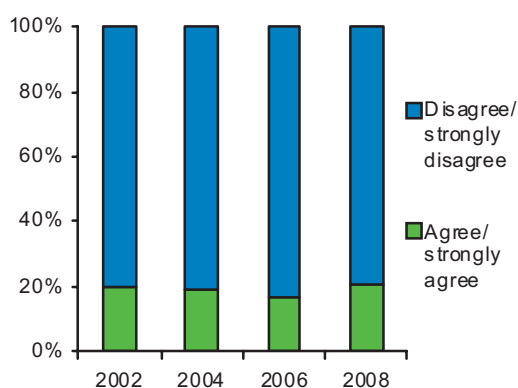
### **“HIV/AIDS is a less serious threat than it used to be because of new treatments”**

**Table 27. “HIV/AIDS is a less serious threat...” by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	43	5.4	62	5.3	63	5.3	88	6.1
Agree	111	14.0	162	13.8	133	11.2	215	14.8
Disagree	264	33.4	366	31.2	324	27.2	407	28.0
Strongly disagree	373	47.2	584	49.7	670	56.3	744	51.2
Total	791	100.0	1174	100.0	1190	100.0	1454	100.0

Note: ‘Not stated’ = 21, 46, 38, 73 by round. P=ns.

**Figure 32. “HIV/AIDS is a less serious threat...” (combined responses) by survey**



Note: ‘Not stated’ not shown.

Table 27 shows that only one in five respondents in 2008 (around 20%) agreed that “HIV/AIDS is a less serious threat than it used to be because of new treatments”, with just 6.1% agreeing strongly with this statement.

As Figure 32 illustrates, agreement with statement has remained very steady over time.

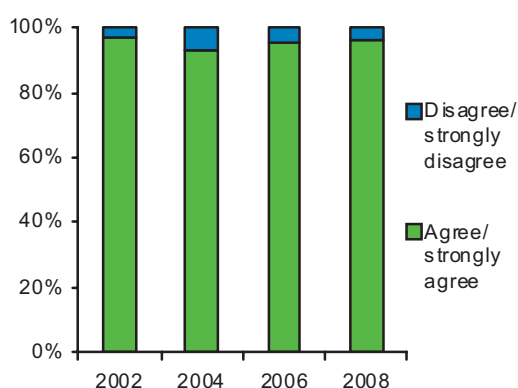
### “Condoms are OK as part of sex”

Table 28. “Condoms are ok as part of sex” by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	478	60.3	676	58.0	774	65.3	954	65.8
Agree	291	36.7	411	35.3	358	30.2	444	30.6
Disagree	18	2.3	43	3.7	36	3.0	39	2.7
Strongly disagree	6	0.8	36	3.1	18	1.5	14	1.0
Total	793	100.0	1166	100.0	1186	100.0	1451	100.0

Note: ‘Not stated’ = 19, 54, 42, 76 by round. P=ns.

Figure 33. “Condoms are ok as part of sex” (combined responses) by survey



Note: ‘Not stated’ not shown.

Table 28 shows that two thirds (65.8%) of respondents in 2008 strongly agreed that “condoms are ok as part of sex”, and that less than 5% either disagreed or strongly disagreed.

These findings have been very consistent since the first survey in 2002, as illustrated in Figure 33. Over time, 97.0%, 93.2%, 95.5% and 96.4% either agreed or agreed strongly with this statement.

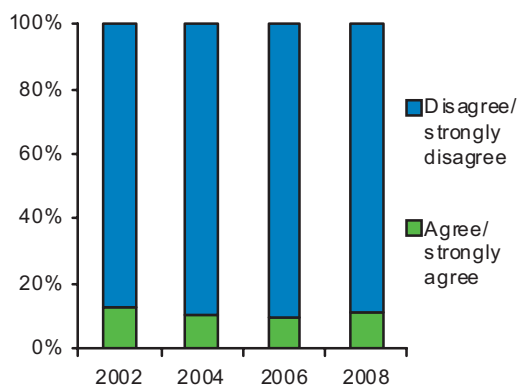
### “I would sometimes rather risk HIV transmission than use a condom during anal sex”

Table 29. “I would sometimes rather risk HIV transmission than use a condom ...” by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	32	4.1	45	4.0	34	2.9	65	4.5
Agree	70	8.9	70	6.2	74	6.3	101	7.0
Disagree	152	19.3	205	18.3	203	17.3	256	17.7
Strongly disagree	535	67.8	802	71.5	865	73.6	1024	70.8
Total	789	100.0	1122	100.0	1176	100.0	1446	100.0

Note: ‘Not stated’ = 23, 98, 52, 81 by round. P=ns.

**Figure 34. “I would sometimes rather risk HIV transmission than use a condom...” (combined responses) by survey**



Note: 'Not stated' not shown.

Around 70% (70.8%) of respondents in 2008 strongly disagreed that they would “sometimes rather risk HIV transmission than use a condom during anal sex” (Table 29).

However, 11.5% of respondents either agreed or strongly agreed with this statement in 2008.

Again, a consistent proportion in all surveys since 2002 have responded in this way, as shown in Figure 34 (12.9%, 10.3%, 9.2% and 11.5% over time).

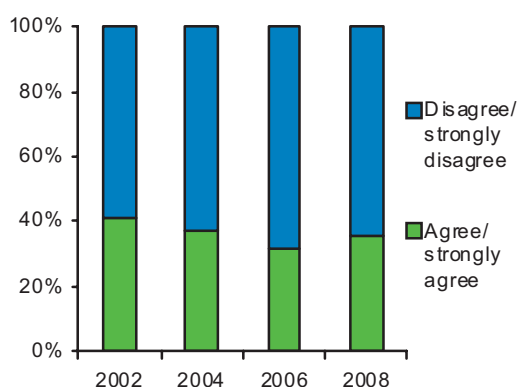
**“I don’t like wearing condoms because they reduce sensitivity”**

**Table 30. “I don’t like wearing condoms because they reduce sensitivity” by survey**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	98	12.5	111	9.6	93	7.9	149	10.4
Agree	228	29.0	321	27.9	278	23.7	370	25.7
Disagree	208	26.4	379	32.9	384	32.8	416	28.9
Strongly disagree	253	32.2	340	29.5	416	35.5	505	35.1
Total	787	100.0	1151	100.0	1171	100.0	1440	100.0

Note: 'Not stated' = 25, 69, 57, 87 by round. P<0.05.

**Figure 35. “I don’t like wearing condoms because they reduce sensitivity” (combined responses) by survey**



Note: 'Not stated' not shown.

In 2008, one in ten (10.4%) strongly agreed that “I don’t like wearing condoms because they reduce sensitivity”, and a quarter (25.7%) agreed with this. However, the majority (64%) either disagreed or disagreed strongly (Table 30).

There was a statistically significant downward trend in agreement with this statement, as illustrated in Fig 35 (41.4%, 37.5%, 31.7% 36.0% over time).

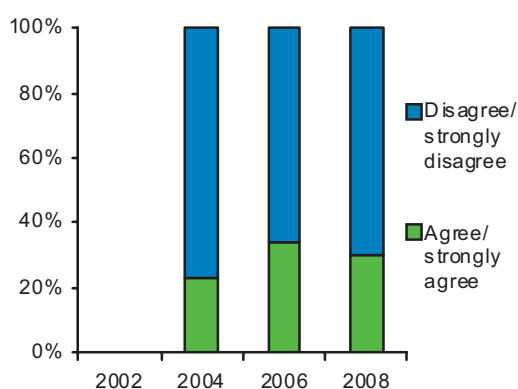
## “A man who knows he has HIV would tell me he was positive before we had sex”

**Table 31.** “A man who knows he has HIV would tell me he was positive ...” by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	-	-	139	12.0	203	17.3	215	15.0
Agree	-	-	132	11.4	196	16.7	214	14.9
Disagree	-	-	490	42.2	498	42.3	644	44.9
Strongly disagree	-	-	401	34.5	280	23.8	361	25.2
Total	-	-	1162	100.0	1177	100.0	1434	100.0

Note: 'Not stated' = 58, 51, 93 by round. P<0.05.

**Figure 36.** “A man who knows he has HIV would tell me he was positive...” (combined responses) by survey



Just under a third (29.9%) of respondents in 2008 believed that “a man who knows he has HIV would tell me he was positive before we had sex” (Table 31). However, the majority either disagreed (44.9%) or disagreed strongly (25.2%) with this.

Figure 36 indicates that although there was a proportional decline in agreement with this statement between 2006 and 2008, the general trend was upwards from the 2004 baseline.

Note: 'Not stated' not shown.

## “The sex I have is always as safe as I want it to be”

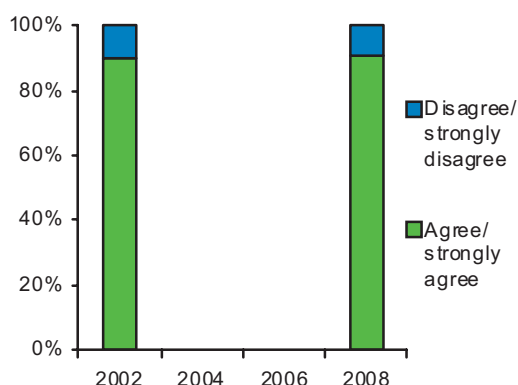
**Table 32.** “The sex I have is always as safe as I want it to be” by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	394	50.3	-	-	-	-	809	55.8
Agree	311	39.7	-	-	-	-	507	35.0
Disagree	57	7.3	-	-	-	-	111	7.7
Strongly disagree	22	2.8	-	-	-	-	23	1.6
Total	784	100.0	-	-	-	-	1450	100.0

Note: 'Not stated' = 28, 77 by round. P=ns.



**Figure 37.** “The sex I have is always as safe as I want it to be” (combined responses) by survey



Note: 'Not stated' not shown.

Over half (55.8%) of respondents in 2008 strongly agreed that “the sex I have is always as safe as I want it to be”, although around one in ten respondents (9.2%) either disagreed or disagreed strongly (Table 32).

This question was last asked in the baseline 2002 survey, and the findings for the overall sample have remained very consistent (10.1% agreeing or agreeing strongly with this in 2002) (Fig 37).

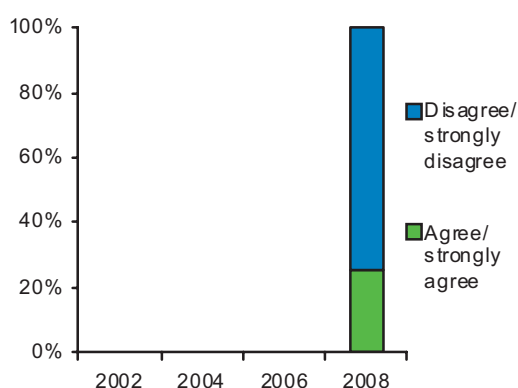
### “Sometimes I feel under pressure not to use a condom”

**Table 33.** “Sometimes I feel under pressure not to use a condom” by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	-	-	-	-	-	-	96	6.6
Agree	-	-	-	-	-	-	271	18.7
Disagree	-	-	-	-	-	-	415	28.7
Strongly disagree	-	-	-	-	-	-	664	45.9
Total	-	-	-	-	-	-	1446	100.0

Note: 'Not stated' = 81 in 2008.

**Figure 38.** “Sometimes I feel under pressure not to use a condom” (combined responses) by survey



Note: 'Not stated' not shown.

The question “sometimes I feel under pressure not to use a condom” was asked for the first time in 2008. Of all respondents, a quarter (25.4%) either agreed or agreed strongly with this statement, including 6.6% who strongly agreed (Table 33).

That such a large proportion of respondents agreed with this statement is concerning, and it will be important to examine further whether the characteristics of respondents who agreed differ in some way to those who did not.

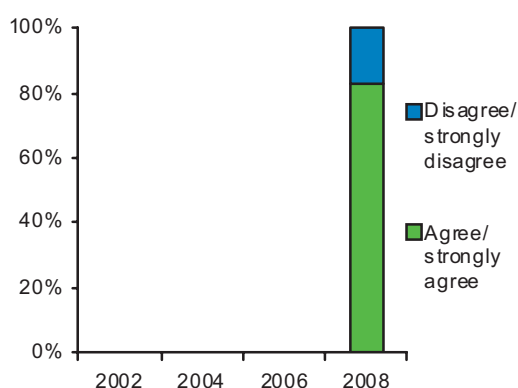
## “In the last year I’ve seen safe sex messages that were relevant to me”

**Table 34.** “In the last year I’ve seen safe sex messages that were relevant to me” by survey

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Strongly agree	-	-	-	-	-	-	467	33.2
Agree	-	-	-	-	-	-	697	49.6
Disagree	-	-	-	-	-	-	145	10.3
Strongly disagree	-	-	-	-	-	-	96	6.8
Total	-	-	-	-	-	-	1405	100.0

Note: Not stated = 122 in 2008.

**Figure 39.** “In the last year I’ve seen safe sex messages that were relevant to me” (combined responses) by survey



Note: ‘Not stated’ not shown.

The question “in the last year I’ve seen safe sex messages that were relevant to me” was also asked for the first time in 2008. Most respondents either agreed (49.6%) or agreed strongly (33.2%) with this statement (Table 34).

However, 17.2% of respondents either disagreed or disagreed strongly, and it will similarly be important to better understand these men’s characteristics in order to improve the delivery of HIV health promotion resources (Fig 39).



# | Condom use classifications

This section outlines the two ways of expressing condom use frequencies that are used in the GAPSS project: *Any unprotected anal sex* and *High, Medium and Low* condom use.

## **Any unprotected anal sex**

The first classification is the number of respondents who reported *at least once not using a condom during anal sex*. It distinguishes respondents who had any instances of unprotected anal sex from respondents who always used a condom when engaging in anal sex in the six months prior to survey (Table 35).

“Always used a condom” =  A cells  
 “Not always used a condom” =  N cells

**Table 35. Condom use classification: Any unprotected sex**

		When receptive, used condoms...					
		Not receptive	Always	Almost always	1/2 time	Very rarely	Never
When insertive, used condoms...	Not insertive		A	N	N	N	N
	Always	A	A	N	N	N	N
	Almost always	N	N	N	N	N	N
	1/2 time	N	N	N	N	N	N
	Very rarely	N	N	N	N	N	N
	Never	N	N	N	N	N	N

## **High, Medium, Low condom use**

The second utilises the five-point condom use frequency scale in the questionnaire (condom use ‘always’, ‘almost always’, ‘about half the time’, ‘very rarely’ and ‘never’) to extend the description of unprotected sex into a three-part categorisation of High, Medium and Low. Under this typology, *“High” condom users are those who used a condom at least “always” or “almost always” when they engaged in either receptive or insertive anal sex, “Low” condom users are those who used condoms at most “very rarely” or “never” when they engaged in either receptive or insertive anal sex, with the rest categorised as having used condoms at a “Medium” level* (Table 36).

Some complexity arises because some men may have used condoms “always” for receptive anal sex and “never” for insertive anal sex and vice versa. These “asymmetric” condom users have been grouped into the “Medium” category for the purposes of this analysis.

This typology has been developed because it enables a respondent who used condoms 99% of the time to be differentiated from someone who very rarely or never used a condom for anal sex. It also acknowledges that men who are otherwise habitual condom users may ‘slip up’ from time to time, and that it may still be useful to distinguish such individuals from respondents who were less habitual condom users.


“High” =  H cells  
 “Medium” =  M cells  
 “Low” =  L cells

Table 36. Condom use classification: High, Medium, Low

		When receptive, used condoms...					
		Not receptive	Always	Almost always	1/2 time	Very rarely	Never
When insertive, used condoms...	Not insertive		H	H	M	L	L
	Always	H	H	H	M	M	M
	Almost always	H	H	H	M	M	M
	1/2 time	M	M	M	M	M	M
	Very rarely	L	M	M	M	L	L
	Never	L	M	M	M	L	L

These condom use frequencies are expressed in three ways in various parts of this report:  
 (a) as a proportion of those who had anal sex with a (casual/current regular) partner;  
 (b) as a proportion of those who reported a (casual/current regular) partner;  
 (c) as a proportion of the total sample.

## | Sex with a current regular “boyfriend”-type partner

In the report of the 2008 survey, we separately describe the findings for current regular sexual partners according to whether this man was a “boyfriend, long-term lover, life partner or civil union partner” (hereafter “boyfriend”) or a “fuckbuddy, friend I have sex with” (hereafter “fuckbuddy”). This differs from previous GAPSS reports which have not distinguished the main summary findings by the type of regular sexual relationship.

As reported earlier, 801 respondents in 2008 or 54.6% of the total sample of 1527 stated that they currently had a regular male sex partner. Of these, 591 respondents (78.3% of the 755 men providing information on the type of current regular partner) described this man as a boyfriend.

### **Anal sex with a current boyfriend**

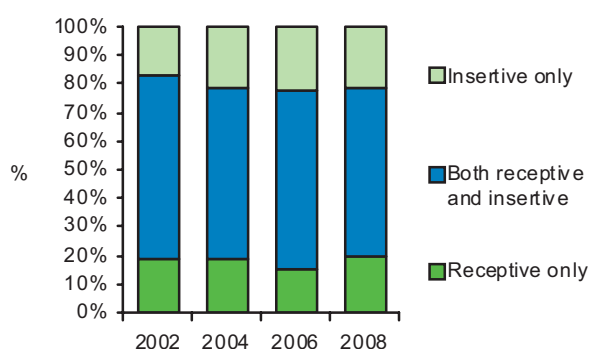
The proportion of respondents with a current boyfriend-type partner who engaged in any anal intercourse in the six months prior to survey with this man was stable over time. In 2008 this was 83.8%, similar to 2002-2006 (80.9%, 81.2%, 83.1%) (Table 37).

**Table 37. Had anal sex with a boyfriend-type regular male partner in last six months by survey**

Had anal sex with boyfriend	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Yes	242	80.9	396	81.2	389	83.1	485	83.8
No	57	19.1	92	18.9	79	16.9	94	16.2
Total	299	100.0	488	100.0	468	100.0	579	100.0

Note: 'Not stated' = 1, 16, 9, 12 by round. P=ns.

**Figure 40. Modality of anal sex with boyfriend in previous six months by survey**



There were no statistically significant changes in the modality of anal sex with a current boyfriend partner in the previous six months (Fig 40).

In 2008, 80.6% of those having anal sex engaged in at least one act of insertive anal sex with their boyfriend, and 79.0% engaged in at least one act of receptive anal sex.

### ***Any unprotected anal sex with a current boyfriend***

As with previous reports, we first present condom use data as the proportion reporting “any” unprotected anal sex, and then report the categorisation of condom use into “High”, “Medium” and “Low” frequencies. Table 38 provides information on the total samples from 2002-2008 on “any” unprotected anal sex with a current boyfriend, enabling condom use rates to be expressed in a variety of ways.

**Table 38. Any unprotected anal sex with current boyfriend by survey: whole sample**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No current boyfriend partner	478	61.5	697	58.8	695	59.6	877	60.2
Boyfriend but no anal sex	57	7.3	92	7.8	80	6.9	94	6.5
Boyfriend and anal sex:								
Always used a condom	67	8.6	127	10.7	92	7.9	131	9.0
At least once did not use a condom	175	22.5	269	22.7	300	25.7	355	24.4
Total	777	100.0	1185	100.0	1167	100.0	1457	100.0

Note: 'Not stated' = 35, 35, 61, 70 by round. P=ns.

Of the respondents who had any anal sex with a current boyfriend in the previous six months, between 2002 and 2008 the proportion reporting any non-condom use was 72.3%, 67.9%, 76.9% and 73.2% respectively (Fig 41) (p=ns).

Enlarging the base to all those who had a current boyfriend, between 2002 and 2008 the proportion who reported engaging in any unprotected anal sex with this man in the previous six months was 58.5%, 55.1%, 63.9% and 61.3% respectively (p=ns) (data not shown in Figures overleaf).

Finally, expressing the rate of “any” unprotected anal sex with a current boyfriend partner out of the total GAPSS sample, Table 38 and Fig 43 shows that between 2002 and 2008, 22.5%, 22.7%, 25.7% and 24.4% at least once did not use a condom with this man in the six months prior to survey.

Figure 41. Any unprotected anal sex in previous six months by survey: of those having anal sex with current boyfriend

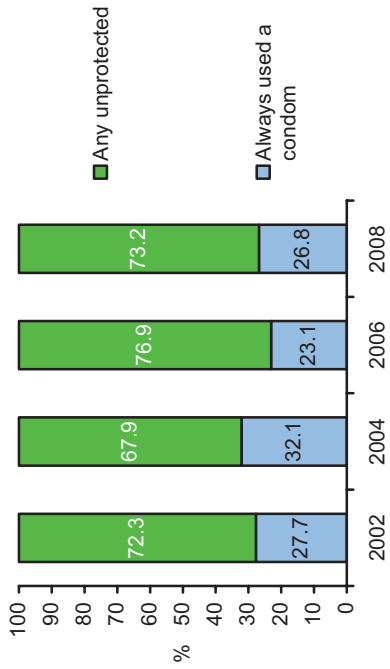


Figure 42. Had anal sex with current boyfriend in previous six months by survey

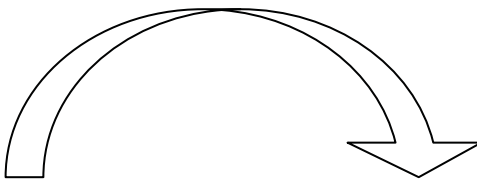
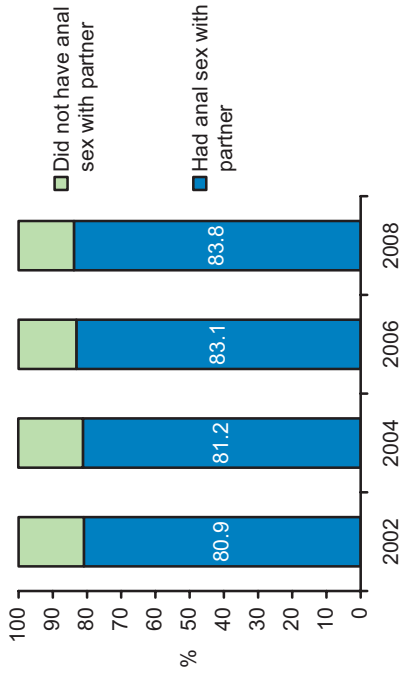


Figure 43. Any unprotected anal sex with boyfriend in previous six months by survey: of whole sample

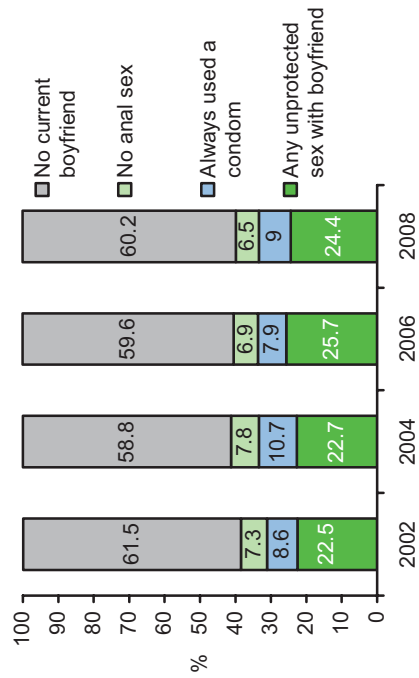
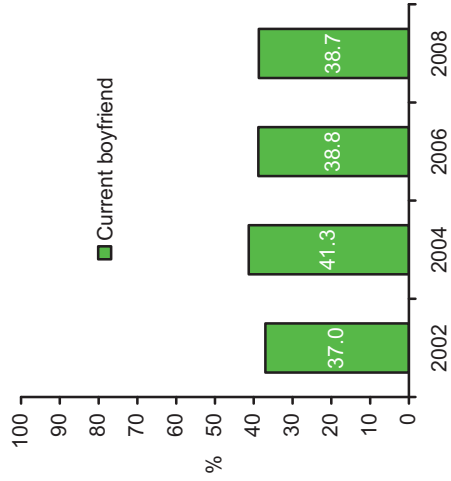


Figure 44. Have a current boyfriend by survey





### **High, Medium, Low condom use with a current boyfriend**

A different way to explore unprotected sex is to examine High, Medium and Low frequency condom use as opposed to whether any non-condom use has occurred. As the following results indicate, respondents were roughly divided into two groups – those who used condoms at a High level with a current boyfriend, and those who used them at a Low level, with few reporting Medium levels of condom use.

**Table 39. Any unprotected anal sex with current boyfriend by survey: whole sample**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No current boyfriend partner	478	61.5	697	58.8	695	59.6	877	60.2
Boyfriend but no anal sex	57	7.3	92	7.8	80	6.9	94	6.5
Boyfriend and anal sex:								
High condom use	83	10.7	151	12.7	131	11.3	165	11.3
Medium condom use	20	2.6	27	2.3	27	2.3	33	2.3
Low condom use	137	17.7	218	18.4	228	19.6	286	19.7
Total	775	100.0	1185	100.0	1161	100.0	1455	100.0

Note: 'Not stated' = 37, 35, 67, 72 by round.

Of respondents who engaged in anal intercourse with their current boyfriend, between 2002 and 2008 the proportion reporting “Low” condom use was 57.1%, 55.1%, 59.3% and 59.2% respectively, while the proportion reporting “High” condom use was 34.6%, 38.1%, 33.7% and 34.0% (Fig 45) (p=ns).

Out of the whole GAPSS sample, between 2002 and 2008 the proportion reporting “Low” condom use was 17.7%, 18.4%, 19.6% and 19.7% respectively (Table 39 and Fig 47).



Figure 45. High, Medium, Low condom use in previous six months by survey: of those having anal sex with current boyfriend

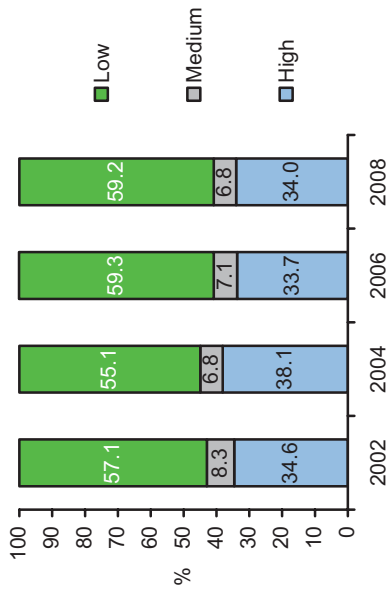


Figure 46. Had anal sex with current boyfriend in previous six months by survey

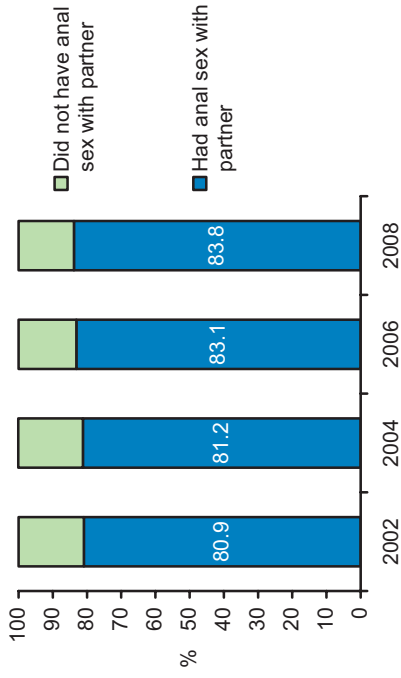


Figure 47. High, Medium, Low condom use with boyfriend in previous six months by survey: of whole sample

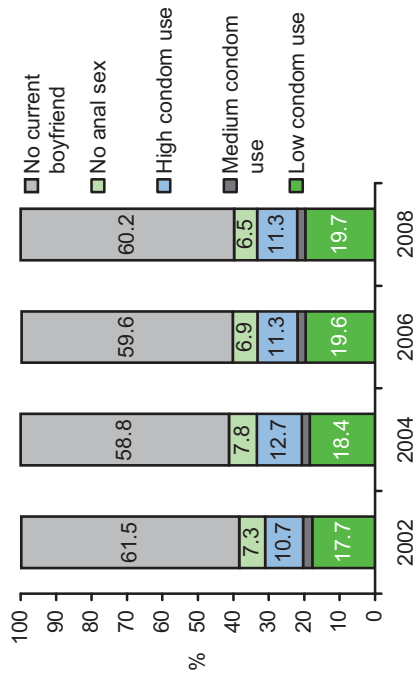
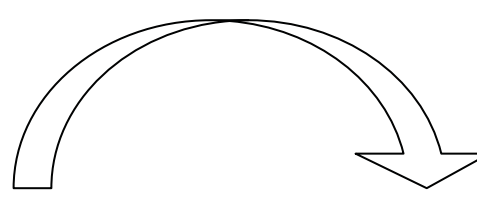
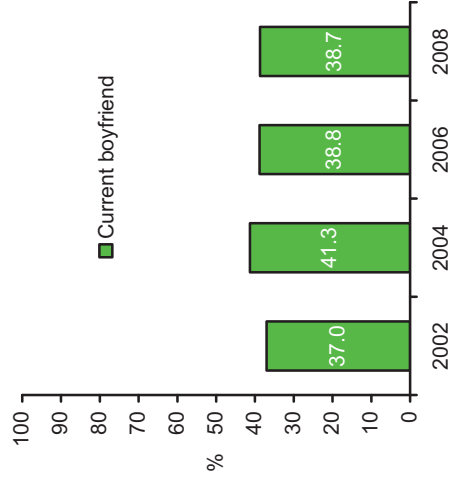


Figure 48. Have a current boyfriend by survey



## **Changes over time among key groups**

In addition to tracking overall changes in risk practices between 2002 and 2008, the GAPSS survey aims to examine trends within key HIV health promotion target groups among MSM. The base chosen for this analysis is those respondents who had a boyfriend at the time of survey, the outcome was “any” unprotected anal sex, and we examined changes by site of recruitment, age group, length of relationship, respondent’s HIV test status, and possible seroconcordancy. The average rates of non-condom use with a boyfriend for the whole sample were 58.5%, 55.1%, 63.9% and 61.3% from 2002 to 2008.

### **Site of recruitment**

There were no statistically significant changes over time by site of recruitment (Fig 49). Gay bar recruits demonstrated rising rates of unprotected sex until 2006 but this has since declined.

### **Age group**

While younger respondents reported increasing rates of unprotected sex with their boyfriend for the first three surveys, this decreased in 2008. Instead, respondents aged 30-44 reported a statistically significant rise in unprotected sex over the whole period ( $p < 0.05$ ) (Fig 50).

### **HIV test status**

There were no statistically significant increases in unprotected sex over time by HIV test status (Fig 51). In general, those who had last tested HIV negative reported the highest rate of any recent non condom use, and respondents who had previously tested HIV positive reported the lowest rate of any unprotected anal sex.

### **Possible HIV seroconcordancy**

There was a statistically significant increase in unprotected sex reported by respondents who were in a current relationship with a boyfriend of unknown HIV seroconcordancy (i.e. either they had never tested for HIV, their current boyfriend had never tested for HIV, or his HIV test status was unknown) (Fig 52). This rose from 43.3% to 54.4% from 2002 to 2008.

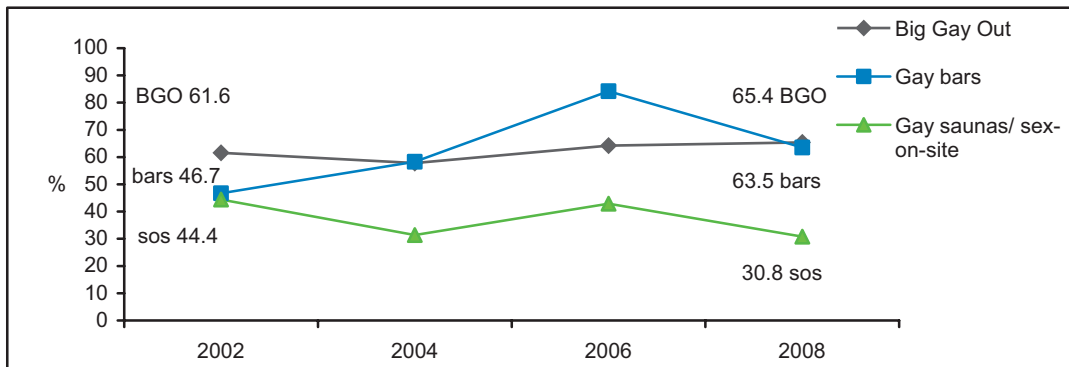
### **Length of relationship**

There were no significant trends by length of relationship (Fig 53). More recent boyfriend-type relationships tended to be more protective in terms of regular condom use than were relationships that were more than six months in duration at the time of survey.

### **Ethnic group**

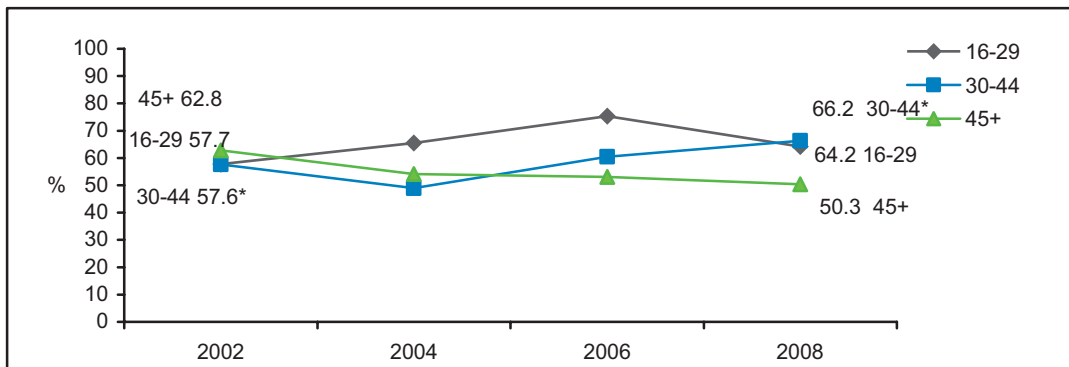
There were no statistically significant trends by ethnic group between 2002-2008 (Fig 54). Beyond NZ European, Māori and Asian ethnicities, the analysis was hampered by small numbers of respondents for the remaining ethnic groups.

**Figure 49. Changes in rate of “any” unprotected anal sex with a current boyfriend by site of recruitment 2002-2008**



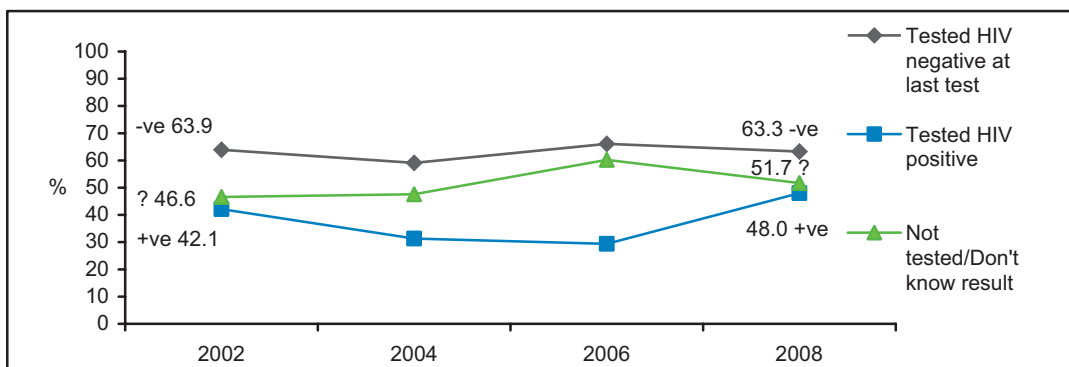
Note: No statistically significant trends between 2002 and 2008.

**Figure 50. Changes in rate of “any” unprotected anal sex with a current boyfriend by age group 2002-2008**



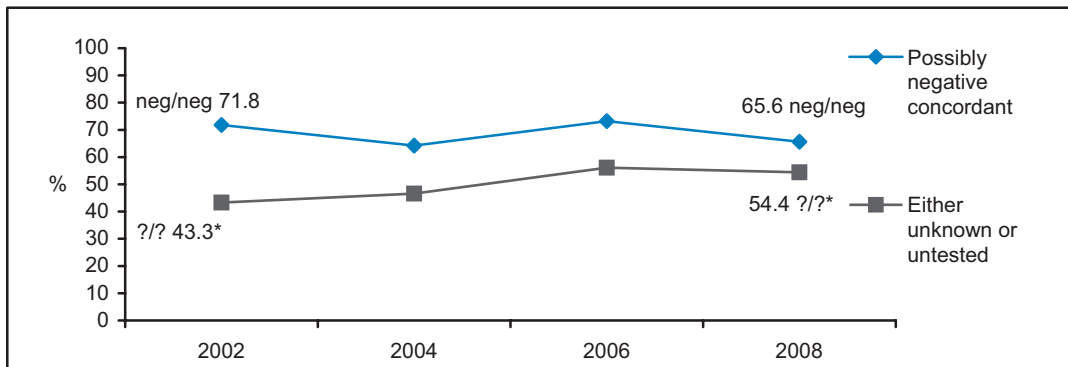
Note: \* P<0.05 over time .

**Figure 51. Changes in rate of “any” unprotected anal sex with a current boyfriend by HIV test status 2002-2008**



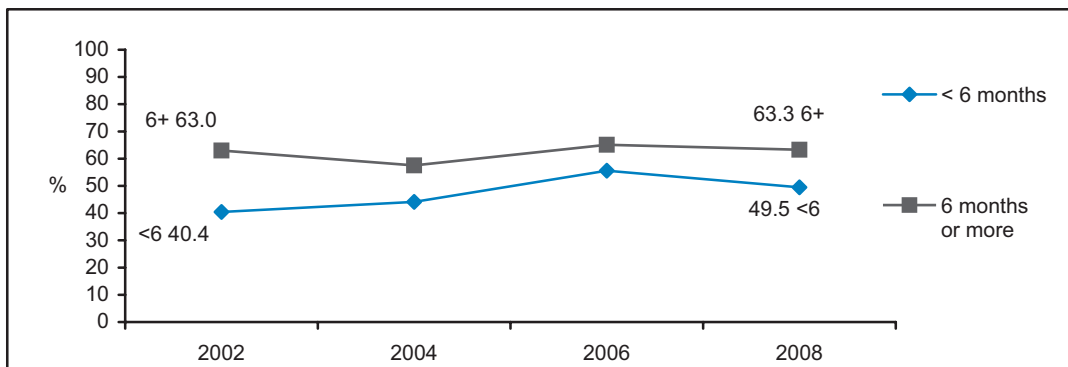
Note: No statistically significant trends between 2002 and 2008.

**Figure 52. Changes in rate of “any” unprotected anal sex with a current boyfriend by possible seroconcordancy 2002-2008**



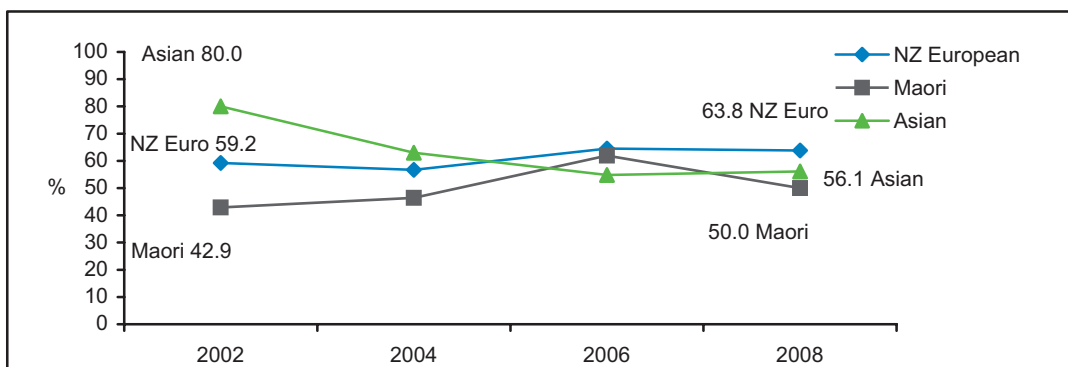
Note: \* P<0.05 over time .

**Figure 53. Changes in rate of “any” unprotected anal sex with a current boyfriend by length of relationship 2002-2008**



Note: No statistically significant trends between 2002 and 2008.

**Figure 54. Changes in rate of “any” unprotected anal sex with a current boyfriend by ethnicity 2002-2008**



Note: No statistically significant trends between 2002 and 2008. Pacific and “other” ethnicities not included due to small numbers.

## Sex with a current “fuckbuddy”-type partner

This section summarises the condom use findings for sex with a current regular sexual partner whom the respondent described as a “fuckbuddy”. It follows the same format as the previous section on regular partners described as a “boyfriend”, however, due to the low number of respondents reporting a main regular sex partner who was a fuckbuddy, it omits the sub-section on changes in condom use over time among key health promotion subgroups.

Of the 801 respondents in 2008 (or 54.6% of the total sample of 1527) who currently had a regular male sex partner, 164 respondents - or 21.7% of the 755 providing information on the type of current partner - described this man as a fuckbuddy.

### Anal sex with a current fuckbuddy

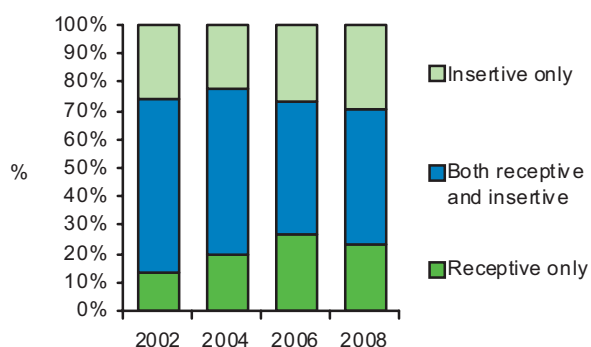
The proportion of respondents with a current fuckbuddy-type partner who engaged in any anal intercourse in the six months prior to survey with this man has increased steadily over time ( $p=0.06$ ). In 2008 this was 85.8%, a rise from 2002 (76.5%), 2004 (79.8%) and 2006 (83.6%) (Table 40).

Table 40. Had anal sex with a fuckbuddy-type regular male partner in last six months by survey

Had anal sex with fuckbuddy	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Yes	62	76.5	99	79.8	117	83.6	139	85.8
No	19	23.5	25	20.2	23	16.4	23	14.2
Total	81	100.0	124	100.0	140	100.0	162	100.0

Note: ‘Not stated’ = 0, 4, 2, 2 by round.  $P=0.06$ .

Figure 55. Modality of anal sex with fuckbuddy in previous six months by survey



There was a statistically significant change in the modality of anal sex with a current fuckbuddy in the previous six months (Fig 55). Over time, proportionately more respondents reported engaging exclusively in receptive anal sex with their fuckbuddy, and there was a reduction in the proportion of respondents who had engaged in both insertive and receptive intercourse.

In 2008, 76.6% of those having anal sex engaged in at least one act of insertive anal sex with their fuckbuddy, and 70.2% engaged in at least one act of receptive anal sex.

### **Any unprotected anal sex with a current fuckbuddy**

As stated in the previous section, we first present condom use data as the proportion reporting “any” unprotected anal sex, and then report the categorisation of condom use into “High”, “Medium” and “Low” frequencies. Table 41 provides information on the total samples from 2002-2008 on “any” unprotected anal sex with a current fuckbuddy, enabling condom use rates to be expressed in a variety of ways.

**Table 41. Any unprotected anal sex with current fuckbuddy by survey: whole sample**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No current fuckbuddy partner	697	89.5	1073	89.5	1030	87.8	1304	88.9
Fuckbuddy but no anal sex	19	2.4	25	2.1	24	2.1	23	1.6
Fuckbuddy and anal sex:								
Always used a condom	36	4.6	59	4.9	77	6.6	85	5.8
At least once did not use a condom	27	3.5	42	3.5	42	3.6	55	3.8
Total	779	100.0	1199	100.0	1173	100.0	1467	100.0

Note: ‘Not stated’ = 33, 21, 55, 60 by round. P=ns.

Of the respondents who had any anal sex with a current fuckbuddy in the previous six months, between 2002 and 2008 the proportion reporting any non-condom use was 43.6%, 42.4%, 35.0% and 38.9% respectively (Fig 56) (p=ns).

Enlarging the base to all those who had a current fuckbuddy, between 2002 and 2008 the proportion who reported engaging in any unprotected anal sex with this man in the previous six months was 33.3%, 33.9%, 29.3% and 33.3% respectively (p=ns) (data not shown in Figures overleaf).

Finally, expressing the rate of “any” unprotected anal sex with a current fuckbuddy partner out of the total GAPSS sample, Table 41 and Fig 58 shows that between 2002 and 2008, 3.5%, 3.5%, 3.6% and 3.8% at least once did not use a condom with this man in the six months prior to survey.



Figure 56. Any unprotected anal sex in previous six months by survey: of those having anal sex with current fuckbuddy

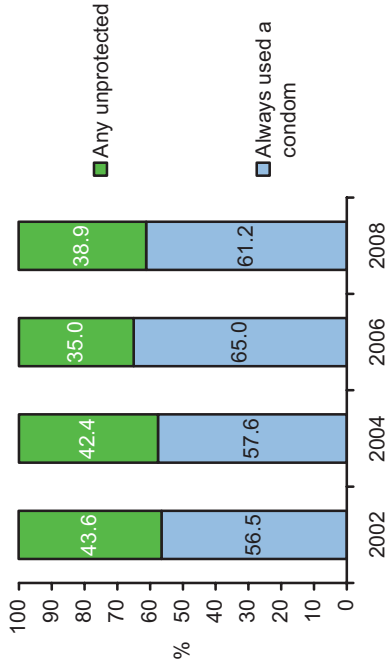


Figure 57. Had anal sex with current fuckbuddy in previous six months by survey

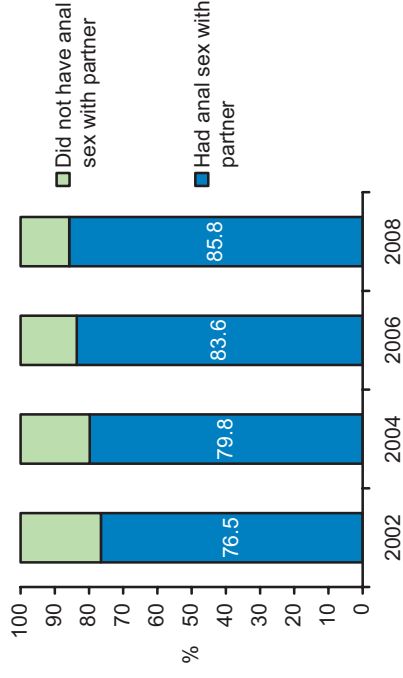


Figure 58. Any unprotected anal sex with fuckbuddy in previous six months by survey: of whole sample

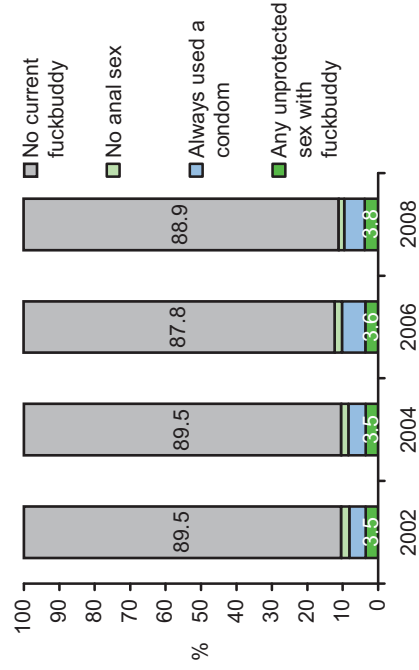
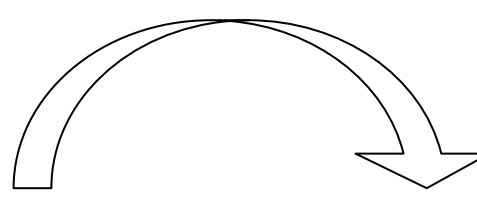
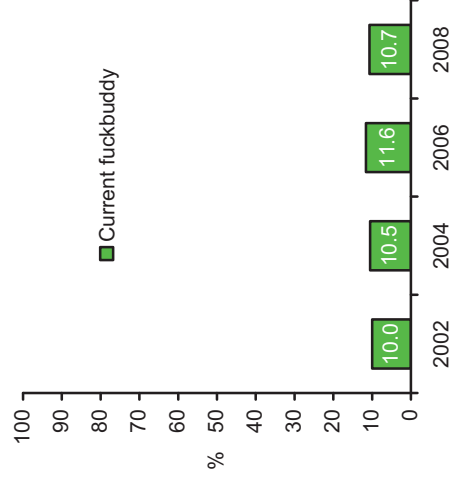


Figure 59. Have a current fuckbuddy by survey



### High, Medium, Low condom use with a current fuckbuddy

As Table 42 and the following Figures show, the results for High, Medium and Low condom use among current fuckbuddy partners differed to those among current boyfriend partners.

**Table 42. Any unprotected anal sex with current fuckbuddy by survey: whole sample**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No current fuckbuddy partner	697	89.5	1073	89.5	1030	87.8	1304	88.9
Fuckbuddy but no anal sex	19	2.4	25	2.1	24	2.1	23	1.6
Fuckbuddy and anal sex:								
High condom use	51	6.6	68	5.7	89	7.6	112	7.6
Medium condom use	7	0.9	14	1.2	7	0.6	15	1.0
Low condom use	5	0.6	19	1.6	20	1.7	14	1.0
<b>Total</b>	<b>779</b>	<b>100.0</b>	<b>1199</b>	<b>100.0</b>	<b>1170</b>	<b>100.0</b>	<b>1468</b>	<b>100.0</b>

Note: 'Not stated' = 33, 21, 58, 59 by round.

Of respondents who engaged in anal intercourse with their current fuckbuddy, between 2002 and 2008 the proportion reporting “Low” condom use was 8.1%, 19.2%, 17.5% and 10.1% respectively, while the proportion reporting “High” condom use was 80.7%, 66.7%, 77.2% and 79.1% (Fig 60) (p=ns).

Out of the whole GAPSS sample, between 2002 and 2008 the proportion reporting “Low” condom use was 0.6%, 1.6%, 1.7% and 1.0% respectively (Table 42 and Fig 62).



Figure 60. High, Medium, Low condom use in previous six months by survey: of those having anal sex with current fuckbuddy

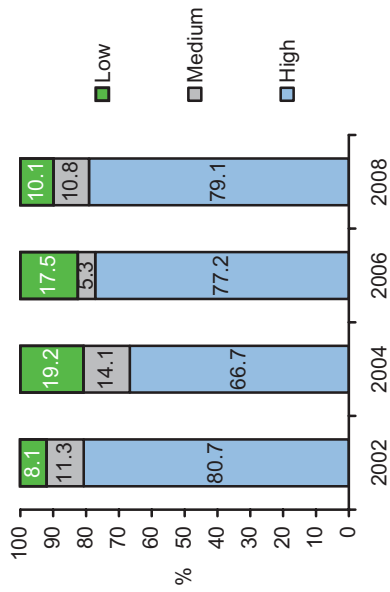


Figure 61. Had anal sex with current fuckbuddy in previous six months by survey

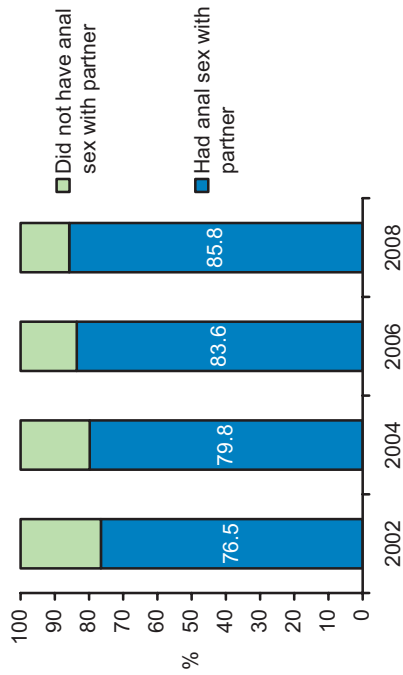


Figure 62. High, Medium, Low condom use with fuckbuddy in previous six months by survey: of whole sample

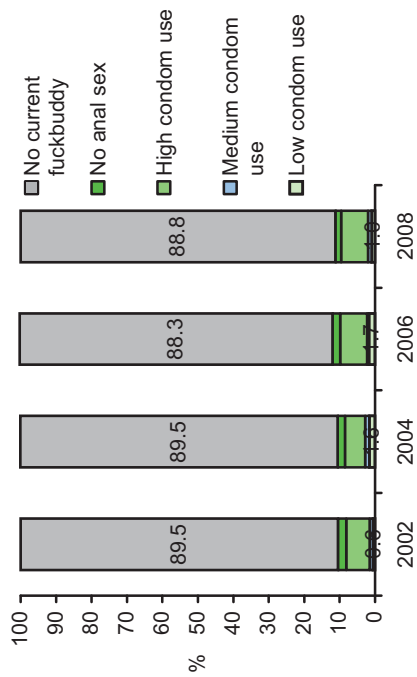
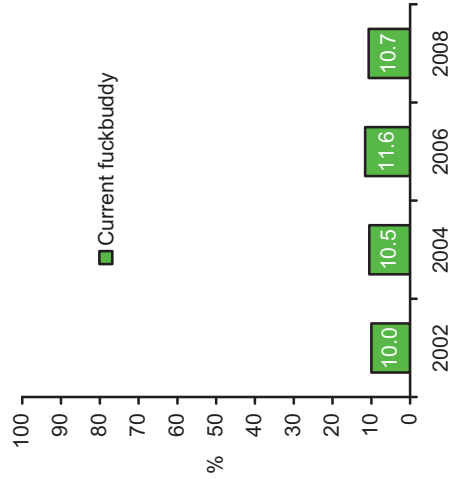


Figure 63. Have a current fuckbuddy by survey





## | Sex with casual partners

This chapter reports findings on anal sex and condom use with casual partners. As described earlier, casual partners were defined on the questionnaire as “men you’ve had sex with once, twice, or three times in the last six months”.

Rates of casual sex with a man in the six months prior to survey among the GAPSS samples have remained very steady over time (Table 43). In 2008, 65.7% of GAPSS respondents stated that they casual sex with a man, similar to previous years (66.2%, 64.0%, 65.8% in 2002-2006).

**Table 43. Had sex with a casual male partner in last six months by survey**

Had casual sex	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Yes	494	66.2	718	64.0	744	65.8	940	65.7
No	252	33.8	404	36.0	386	34.2	490	34.3
Total	746	100.0	1122	100.0	1130	100.0	1430	100.0

Note: Not stated = 66, 98, 98, 97 by round. P=ns over time.

### ***Anal sex with a casual partner***

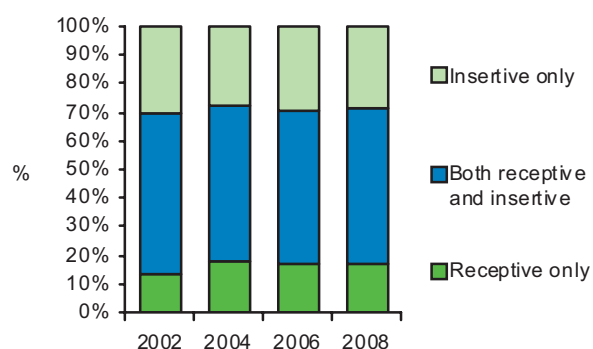
However, there was a statistically significant increase in the proportion of respondents who had anal sex with their casual partner/s in the 2008 survey. As Table 44 shows, this was 80.4% of those having casual sex in the 2008 survey, compared to 68.2%, 72.4%, and 72.3% in 2002-2006.

**Table 44. Had anal sex with a casual male partner in last six months by survey**

Had anal sex with casual partner	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
Yes	337	68.2	520	72.4	538	72.3	756	80.4
No	157	31.8	198	27.6	206	27.7	184	19.6
Total	494	100.0	718	100.0	744	100.0	940	100.0

Note: ‘Not stated’ = 0,0,0,0 by round. P<0.001 over time.

**Figure 64. Modality of anal sex with casual partner in previous six months by survey**



As Fig 64 shows, the modality of anal sex with casual partners in the previous six months was very consistent across all surveys.

In 2008, 83.1% of those having anal sex engaged in at least one act of insertive anal sex, and 71% engaged in at least one act of receptive anal sex.

### ***Any unprotected anal sex with casual partner/s***

Table 45 presents data on anal sex and condom use with casual partners across the four GAPSS surveys. Table 45 and the Figures on the right display results for “any” unprotected anal sex, and Table 46 (overleaf) displays results for High, Medium and Low condom use.

**Table 45. Any unprotected anal sex with casual partner/s: whole sample**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No casual partners	252	33.8	404	36.0	386	34.2	490	34.3
Casual partners but no anal sex	157	21.1	198	17.7	206	18.2	184	12.9
Casual partners and anal sex:								
Always used a condom	225	30.2	346	30.8	350	31.0	520	36.4
At least once did not use a condom	112	15.0	174	15.5	188	16.6	236	16.5
<b>Total</b>	<b>746</b>	<b>100.0</b>	<b>1122</b>	<b>100.0</b>	<b>1130</b>	<b>100.0</b>	<b>1430</b>	<b>100.0</b>

Note: ‘Not stated’ = 66, 98, 98, 97 by round.  $P < 0.001$ .

Of the respondents who had any anal sex with a casual partner in the previous six months, between 2002 and 2008 the proportion reporting any non-condom use was 33.2%, 33.5%, 34.9% and 31.2% respectively (Fig 65) ( $p=ns$ ).

Enlarging the base to all those who had casual sex, between 2002 and 2008 the proportion who reported engaging in any unprotected anal sex in the previous six months was 22.7%, 24.2%, 25.3% and 25.1% ( $p=ns$ ) (data not shown in Figures overleaf).

Finally, expressing the rate of “any” unprotected anal sex with a casual partner out of the total sample, Table 45 and Fig 67 shows that between 2002 and 2008, 15.0%, 15.5%, 16.6% and 16.5% of respondents at least once did not use a condom with a casual partner in the six months prior to survey.

Figure 65. Any unprotected anal sex in previous six months by survey: of those having anal sex with casual partner/s

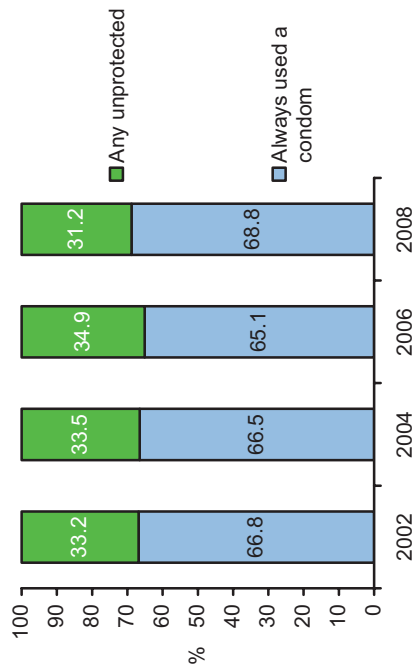


Figure 66. Had anal sex with casual partner/s in previous six months by survey

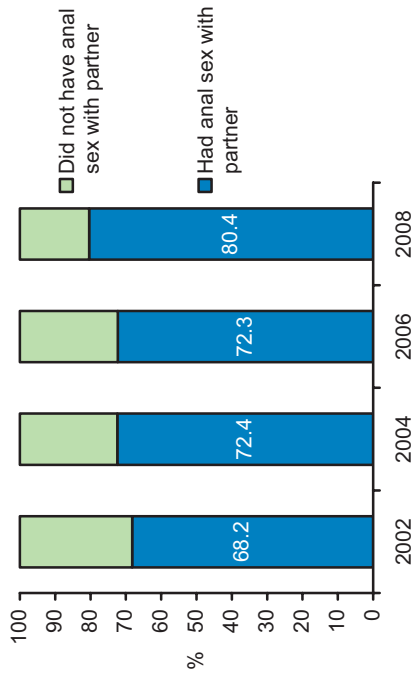


Figure 67. Any unprotected anal sex with casual partner/s in previous six months by survey: of whole sample

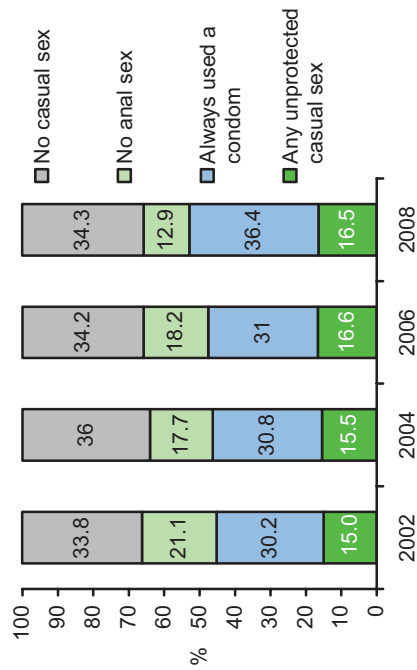
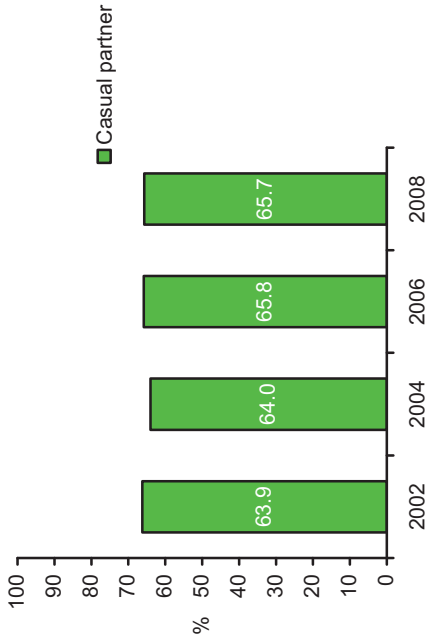


Figure 68. Had casual sex partner/s in previous six months by survey





### High, Medium, Low condom use with casual partner/s

As in previous GAPSS reports, investigating unprotected sex in terms of High, Medium and Low frequency condom use allows us to distinguish between men who are generally engaging in anal sex with casual partners protectively, and those who are potentially placing themselves and other people at high risk of infection (Table 46).

**Table 46. High, Medium, Low condom use with casual partner/s: whole sample**

	2002		2004		2006		2008	
	n	%	n	%	n	%	n	%
No casual partners	252	33.8	404	36.0	386	34.2	490	34.3
Casual partners but no anal sex	157	21.1	198	17.7	206	18.2	184	12.9
Casual partners and anal sex:								
High condom use	286	38.4	444	39.6	465	41.0	647	45.4
Medium condom use	34	4.6	63	5.6	51	4.5	60	4.2
Low condom use	15	2.0	11	1.0	27	2.4	43	3.0
Total	744	100.0	1120	100.0	1135	100.0	1424	100.0

Note: 'Not stated' = 68, 100, 93, 103 by round. P<0.001.

Of those having anal sex with a casual partner, between 2002 and 2008 the proportion reporting "High" condom use was 85.3%, 85.7%, 85.5% and 86.3% respectively (Fig 69). Very few reported using condoms at a "Low" level for all casual anal sex acts in the previous six months (4.5%, 2.2%, 5.0% and 5.8%).



Figure 69. High, Medium, Low condom use in previous six months by survey: of those having anal sex with casual partner/s

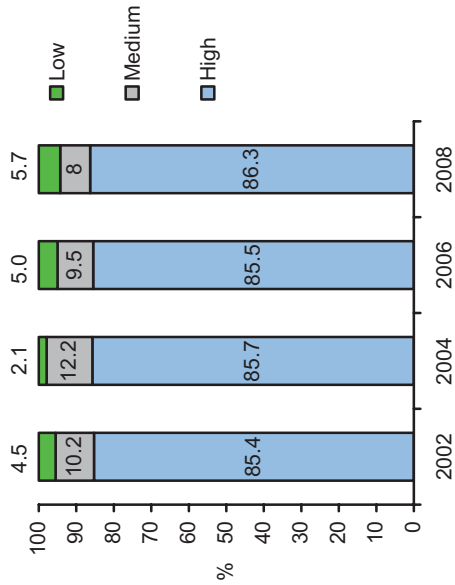


Figure 70. Had anal sex with casual partner/s in previous six months by survey

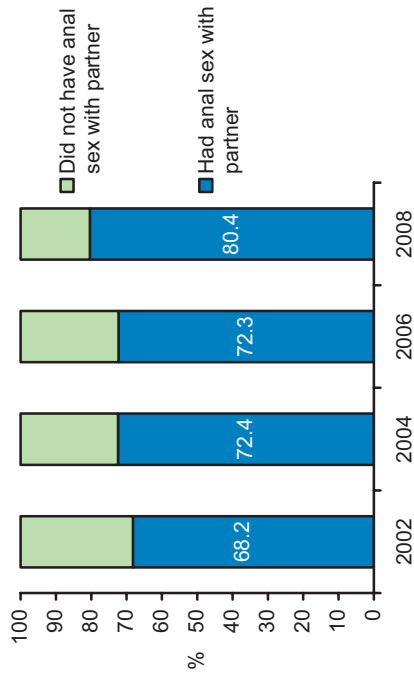


Figure 71. High, Medium, Low condom use with casual partner/s in previous six months by survey: of whole sample

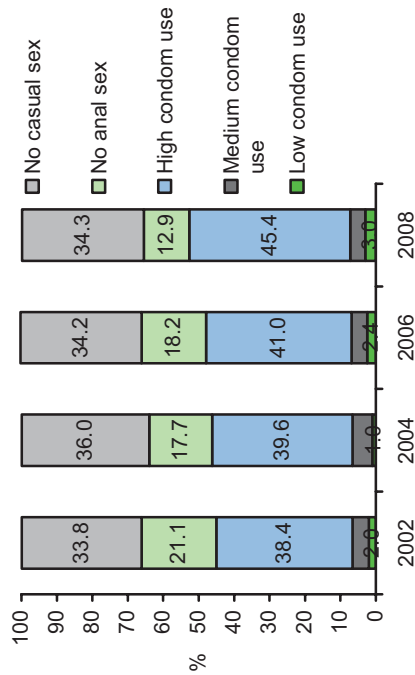
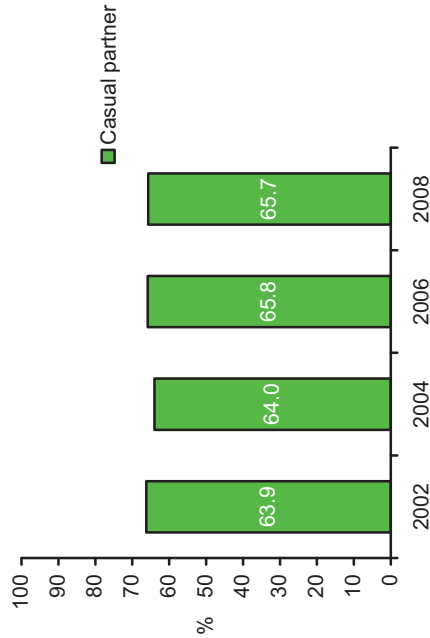


Figure 72. Had casual sex partner/s in previous six months by survey



## **Changes over time among key groups**

The following two pages describe trends in the rate of any unprotected casual sex among key health promotion groups, out of a base of those who engaged in casual sex in the six months prior to survey. Note that as cited earlier, the average rate of any unprotected sex among this base was 22.7%, 24.2%, 25.3% and 25.1% between 2002-2008 (p=ns).

### **Site of recruitment**

There were no statistically significant trends by site of recruitment over time (Fig 73). Respondents recruited from gay bars demonstrated the greatest change over the whole period (12.7% in 2002 to 29.1% in 2008), however the majority of this occurred between the first two survey rounds.

### **Age group**

While younger men (aged under 30) had demonstrated an alarming increase in unprotected casual sex over the first three surveys, in 2008 this had levelled off. Still, this group showed the greatest change over the whole period, from 17.5% in 2002 to 27.0% in 2008 (Fig 74).

### **HIV test status**

There were no statistically significant changes over time by HIV test status (Fig 75), although those who had never tested for HIV showed a gradual increase from 16.7% in 2002 to 23.7% in 2008, and respondents who had tested HIV positive continued to report high rates of any unprotected casual sex (39.5% in 2008).

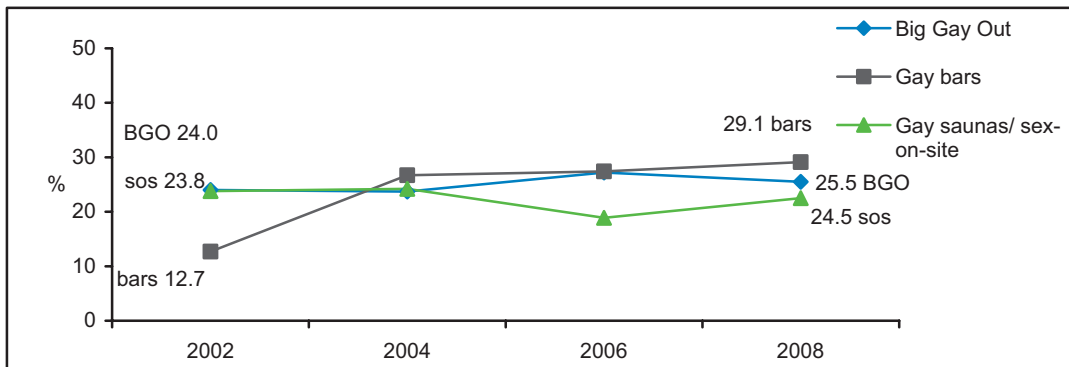
### **Sexual activity class**

Whereas respondents who had 20 or fewer male sexual partners in the previous six months reported no change over the four survey rounds, those in the high sexual activity class (with more than 20 male partners) demonstrated proportionately increasing rates of any unprotected casual sex over time (from 33.6% in 2002 to 44.5% in 2008) (Fig 76).

### **Ethnic group**

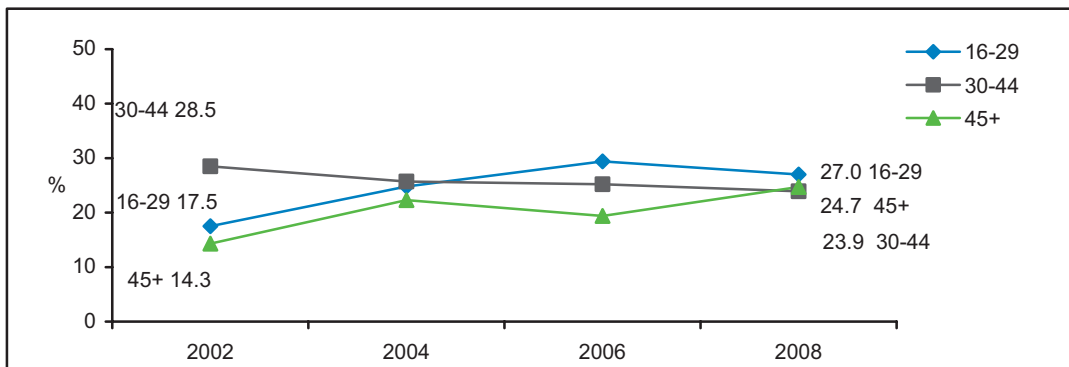
There were no statistically significant changes by ethnic group over time (Fig 77). Participants of NZ European ethnicity reported stable rates of unprotected casual sex, respondents of Māori ethnicity reported a gradual increase but this was not significant, and results for those of an Asian ethnicity fluctuated, possibly due to low numbers (note that Pacific respondents are not included here due to small sample sizes).

**Figure 73. Changes in rate of “any” unprotected anal sex with a casual partner/s by site of recruitment 2002-2008**



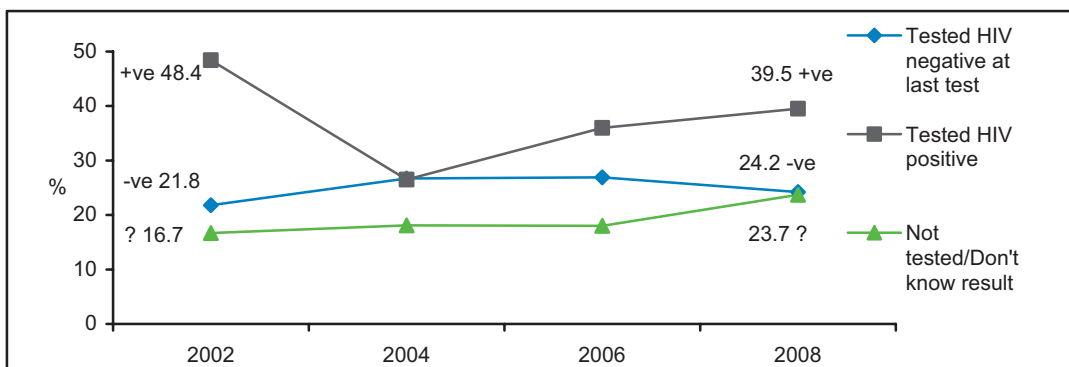
Note: No statistically significant trends between 2002 and 2008.

**Figure 74. Changes in rate of “any” unprotected anal sex with casual partner/s by age group 2002-2008**



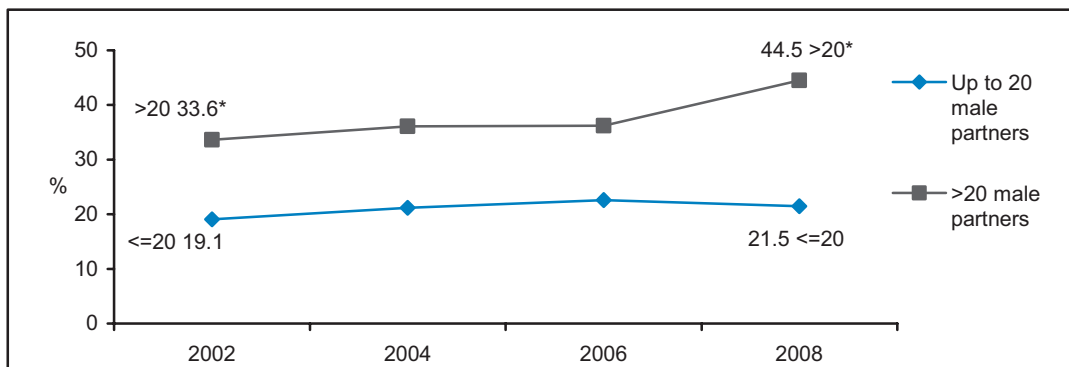
Note: No statistically significant trends between 2002 and 2008.

**Figure 75. Changes in rate of “any” unprotected anal sex with a casual partner/s by HIV test status 2002-2008**



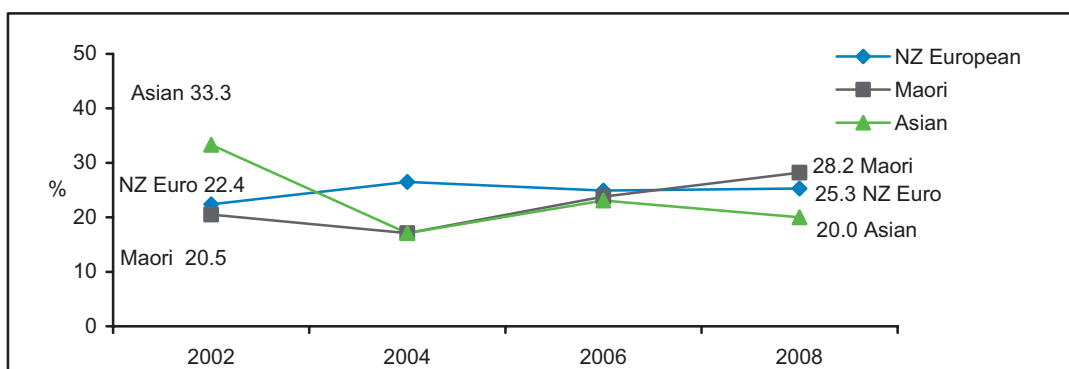
Note: No statistically significant trends between 2002 and 2008.

**Figure 76. Changes in rate of “any” unprotected anal sex with a casual partner/s by sexual activity class 2002-2008**



Note: \* p=0.07 between 2002 and 2008.

**Figure 77. Changes in rate of “any” unprotected anal sex with casual partner/s by ethnicity 2002-2008**



Note: No statistically significant trends between 2002 and 2008. Pacific and “other” ethnicities not included due to small numbers.

## | Characteristics of last anal sex partner

In 2008 a new series of questions were trialled on the characteristics of a respondent's last anal sex partner. By focussing on a specific individual, more detailed information can be gathered about that person (such as their demographic background) and the type of sex that occurred with him at the last anal sex episode.

When combined with information that is already collected about a respondent's characteristics in GAPSS (such as age, ethnicity, number of sexual partners, and HIV test status), we can potentially learn important things about "sexual mixing" patterns. Sexual mixing is a term that describes whether, for a particular characteristic such as age for example, individuals tend to choose sexual partners who are similar to them (called assortative mixing) or dissimilar to them (called dissortative mixing). Sexual mixing patterns are an important factor influencing HIV epidemic spread because they can determine how likely it is that HIV infection will infiltrate different population groups (Gupta et al. 1989; Anderson and May 1992). In other words, if condoms are not used for anal sex, then who has sex with whom becomes a critical predictor of whether HIV is able to move from one sexual network to another, since HIV prevalence is known to be higher in some groups of individuals than it is in others.

When choosing items to include in this series of questions, priority was given to characteristics that were likely to be related to HIV prevalence. We were also interested in certain dimensions of the last anal sex encounter. The list of items included: type of relationship with the last anal sex partner; his approximate age; where this person was first met; place of usual residence; level of usual sexual activity; modality of anal sex and condom use at last anal sex; and beliefs about his HIV status.

Of all respondents, 1391 answered the first question on the type of partner they last had anal sex with, while 136 (8.9%) did not, and we assume that the latter group either have never had anal sex or chose not to answer the question. From other items in the GAPSS survey we know that of the 1391 respondents who reported a last anal sex partner, 1069 (76.9%) had anal sex with a casual or regular sex partner in the last six months. In the basic findings reported here we limit the sample to those whose last episode of anal sex occurred within the last six months, in order to facilitate comparisons between a respondent's characteristics and those of their last anal sex partner.

As Table 47 shows, respondents' last anal sex partner was most likely to be a regular boyfriend (44.3%), followed by a casual or anonymous partner (38.4%), or a regular fuckbuddy (17.4%).

**Table 47. What type of partner was the last man you had anal sex with? (episode in <6 months only) (2008)**

	2008	
	n	%
Regular boyfriend	473	44.3
Regular fuckbuddy	186	17.4
Casual or anonymous	410	38.4
Total	1069	100.0

Respondents who reported a last anal sex partner were then asked what they thought his age was at the time of last anal sex. By comparing the respondent's own age with their estimate of their partner's age, we can see whether the men in our sample chose a partner who was younger, older, or the same age as themselves.

Table 48 shows that 39.2% of respondents last had anal sex with a man who was (or who the respondent believed was) more than five years younger than themselves, and one in five (21.0%) chose a partner who was more than five years older. In total, 39.7% had anal sex with a man who was within five years of their own age (i.e. less than five years older or younger).

Figure 78 then compares the relative age of a respondent and their last anal sex partner by the respondent's own age group. This suggests that respondents aged under 30 were more likely than other respondents to have a last anal sex partner who was within five years of their own age, but were also more likely than others to have a last anal sex partner who was more than five years older than themselves. Conversely, respondents aged 45 and over were most likely to report having a last anal sex partner who was more than five years younger than themselves.

Figure 79 then shows how the respondent met their last anal sex partner. Note that even though the respondents included here last had anal sex in the previous six months, they may have met this partner many years ago.

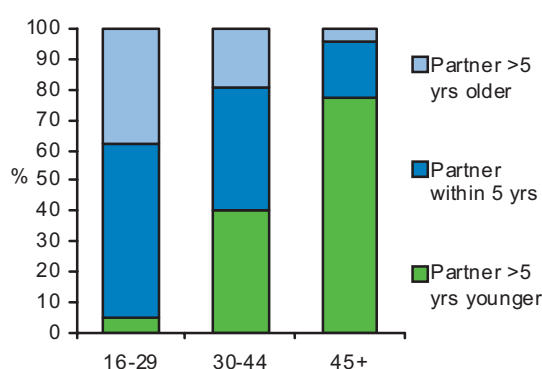
Most respondents met this man on an Internet dating site (26.2%), followed by a gay bar or club (22.2%), a gay sauna (15.4%) or through friends (13.7%).

**Table 48. Relative age of last man respondent had anal sex with (episode in <6 months only) (2008)**

	2008	
	n	%
Partner >5 years younger	399	39.2
Partner 1-5 years younger	180	17.7
Partner same age exactly	55	5.4
Partner 1-5 years older	169	16.6
Partner >5 years older	214	21.0
Total	1017	100.0

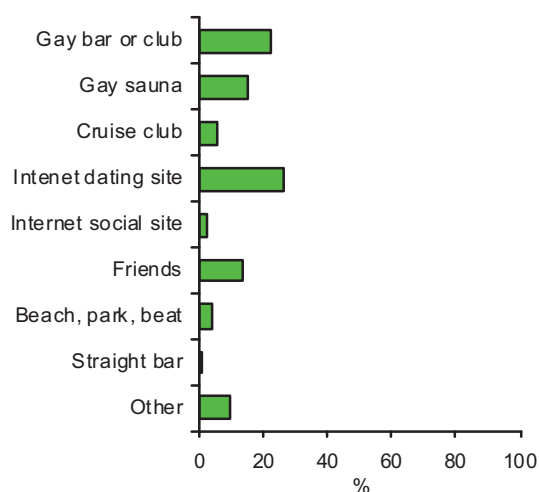
Note: 'Not stated' = 52.

**Figure 78. Relative age of last man respondent had anal sex with (episode in <6 months only) by respondent's own age group (2008)**



Note: 'Not stated' not shown. P<0.001.

**Figure 79. Where did respondent meet the last man they had anal sex with? (episode in <6 months only) (2008)**





Respondents were invited to state where their last anal sex partner normally lived. Instead of an open-ended question, the response options asked the participant to indicate whether this location was the same New Zealand city as themselves, a smaller or a larger New Zealand city, or somewhere overseas.

Table 49 shows that three quarters (75.2%) of respondents believed that this man normally lived in the same NZ city as themselves, while 13.5% believed this man usually lived overseas.

Similarly, respondents were asked whether they thought this man usually had sex with fewer men than they did, more men, about the same number or whether they didn't know.

While Table 50 shows that a quarter (24.7%) felt unable to guess whether their last anal sex partner typically had fewer or more sexual partners than they did, Most respondents were able to indicate whether they thought this man had more, less, or about the same number of male sexual partners as they did.

Interestingly, when examined by the type of last anal sex partner (Fig 80), respondents who last had anal sex with a boyfriend were more likely to believe their boyfriend tended to have sex with fewer men than they did, rather than more men. Respondents who last had anal sex with a casual or anonymous partner were most likely to believe this man had more sexual partners than they did, and were also most likely to state that they "didn't know".

**Table 49. Location of normal residence of last man respondent had anal sex with (episode in <6 months only) (2008)**

	2008	
	n	%
Same NZ city	788	75.2
Smaller NZ city	63	6.0
Larger NZ city	56	5.3
Overseas	141	13.5
<b>Total</b>	<b>1048</b>	<b>100.0</b>

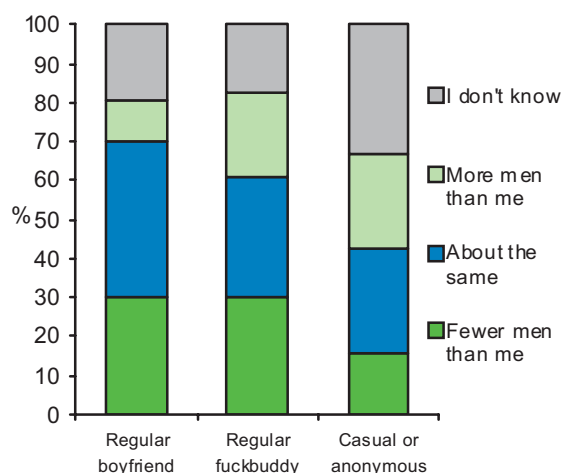
Note: 'Not stated' = 21.

**Table 50. Respondents beliefs about usual level of sexual activity of last man they had anal sex with (episode in <6 months only) (2008)**

Last anal sex partner usually has sex with...	2008	
	n	%
Fewer men than me	254	24.7
About the same number of men	338	32.9
More men than me	183	17.8
I really don't know	254	24.7
<b>Total</b>	<b>1029</b>	<b>100.0</b>

Note: 'Not stated' = 40.

**Figure 80. Respondents beliefs about usual level of sexual activity of last man they had anal sex with (episode in <6 months only), by type of last anal sex partner (2008)**



Note: 'Not stated' not shown. P<0.001.

Respondents were asked to think about the last session of anal sex they had with this partner, and whether they had engaged in any of the following acts: receptive anal sex with a condom; receptive anal sex without a condom; insertive anal sex with a condom; insertive anal sex without a condom.

From the answers to this item we are able to determine whether respondents reported any unprotected anal sex during their last session, or whether any anal sex always involved a condom. Table 51 shows that a condom was used for 62.6% of episodes of last anal sex, and was not used for 37.4% of these episodes.

When we examine these responses by the type of last anal sex partner (Fig 81), condom use was less common if the last anal sex act occurred with a regular boyfriend (40.5%) compared to a regular fuckbuddy (77.8%) or a casual or anonymous partner (81.2%).

Finally, respondents were invited to state what they believed the actual HIV status of their last sexual partner was.

Half (50.7%) believed this man's HIV status was "definitely negative" and a further quarter (26.0%) believed that it was "probably negative" (Table 52). One in five (19.8%) stated that they "didn't know".

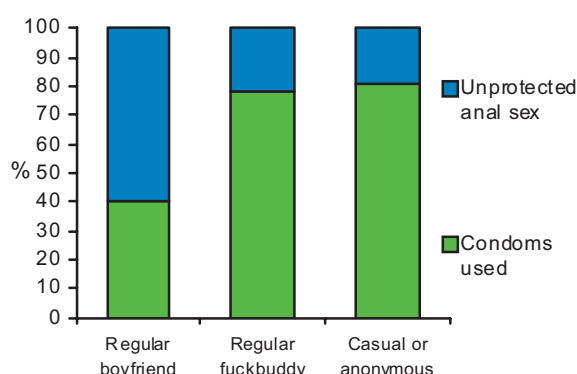
Figure 82 shows that respondents who last had anal sex with a regular boyfriend were most likely to believe this man was "definitely negative". Respondents who last had anal sex with a fuckbuddy were equally likely to think this man was either "definitely negative" or "probably negative", whereas respondents who last had anal sex with a casual or anonymous partner were the most likely to state that they "didn't know" what this man's HIV status was likely to be.

**Table 51. Condom use at last episode of anal sex (episode in <6 months only) (2008)**

	2008	
	n	%
Unprotected anal sex at last sex	391	37.4
Condoms used at last anal sex	654	62.6
<b>Total</b>	<b>1045</b>	<b>100.0</b>

Note: 'Not stated' = 24.

**Figure 81. Condom use at last episode of anal sex (episode in <6 months only), by type of last anal sex partner (2008)**



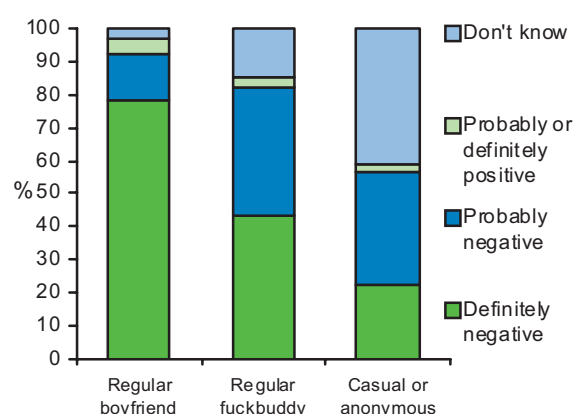
Note: 'Not stated' not shown. P<0.001.

**Table 52. Respondent's belief about the actual HIV status of last man they had anal sex with (episode in <6 months only) (2008)**

	2008	
	n	%
Definitely negative	534	50.7
Probably negative	274	26.0
Probably positive	32	3.0
Definitely positive	5	0.5
Don't know	209	19.8
<b>Total</b>	<b>1054</b>	<b>100.0</b>

Note: 'Not stated' = 15.

**Figure 82. Belief about the actual HIV status of the last man they had anal sex with (episode in <6 months only), by type of last anal sex partner (2008)**



## | Sexual health check-ups and sexually transmitted infections

The 2006 survey was the first time that questions on sexually transmitted infections (STIs) had been asked of GAPSS respondents (Saxton, Dickson & Hughes, 2006). Aside from that data, information on the burden of STIs among MSM in New Zealand still remains scarce, with public health professionals and communities of MSM reliant on findings from ongoing initiatives at individual sexual health clinics (Azariah 2010), information collected during anonymous unlinked HIV seroprevalence studies (Righarts et al. 2009), or national cross-sectional surveys collected some time ago (Saxton, Hughes & Robinson, 2002).

The GAPSS questionnaire in 2008 included a set of items on sexual health check-ups and experiences of STIs that were simplified compared to 2006. This mainly involved limiting questions on STIs to recent experiences over the previous 12 months, and dropping questions on lifetime STI diagnoses as these were unlikely to have changed for the sample over the course of two years. The two items that remained asked whether the respondent had gone for a sexual health check-up or treatment in the last 12 months at any of the listed sites, and whether they had been recently diagnosed with seven named STIs.

### Sexual health check-up

**Table 53. Had a sexual health check-up or treatment in the last 12 months (2008)**

	2006		2008	
	n	%	n	%
Yes	530	45.4	634	46.8
No	637	54.6	721	53.2
Total	1167	100.0	1335	100.0

Note: 'Not stated' = 61, 172 by round. P=ns.

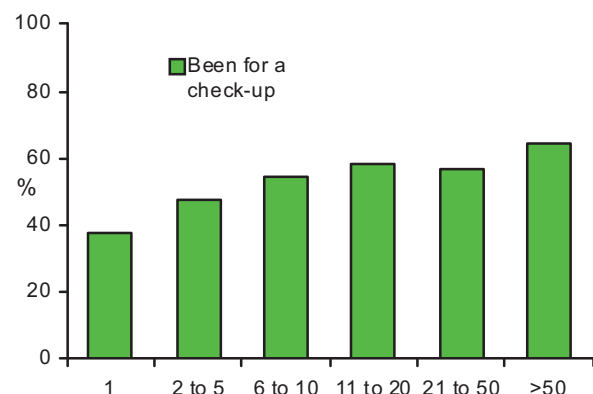
Figure 83 shows that, as expected, seeking sexual health check-ups or treatment was more common among respondents with higher numbers of male sexual partners in the previous six months.

Whereas 37.5% of respondents with one male sexual partner in the previous six months had been for a check-up, this increased to 54.3% among those with 6-10 male partners and 64.1% among those with more than 50 partners.

Table 53 shows that 46.8% of respondents had been for a sexual health check-up or treatment for STIs in the 12 months prior to survey in 2008.

This proportion was very similar to that reported in 2006.

**Figure 83. Been for a sexual health check-up in the last 12 months by selected characteristics (2008)**



Note: 'Not stated' not shown.

Of those who had been for a checkup, the majority had visited a specialist sexual health clinic (51.3%), followed by a GP (47.0%), and a small proportion visited another type of place, for example an NZAF clinic (5.5%) (Fig 84).

It is relevant to note that these data were similar to 2006, however since the 2008 survey the NZAF clinic in Auckland has provided rapid syphilis testing services and promoted these to gay and bisexual men.

### Sexually transmitted infections

Overall, 10% of the 2008 sample disclosed that they had been diagnosed with any one of the seven listed STIs in the 12 months prior to survey (Table 54). This was slightly higher than in 2006 (8.0%), however giardia was dropped in 2008 and replaced with LGV (lymphogranuloma venereum) so the results are not directly comparable.

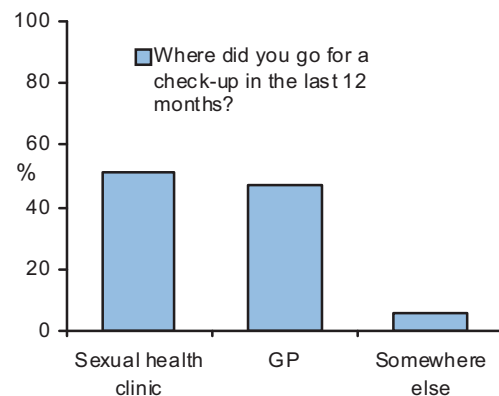
In contrast to 2006, chlamydia was the most common STI reported with 3.4% having been diagnosed with this in the last year.

Gonorrhoea was the next most common (2.9%), followed by herpes (2.6%) and warts (2.4%).

Diagnosis with any of the seven STIs was strongly associated with the number of male sexual partners respondents had had in the previous six months (Fig 85).

One in twenty respondents (5.0%) who reported just one male sexual partner in the previous six months had been diagnosed with an STI, with this increasing to 13.5% of those with 6-10 male partners, and 31.7% of those with more than 50 male partners over this period.

**Figure 84. Where respondents went for check-ups in the last 12 months (2008)**

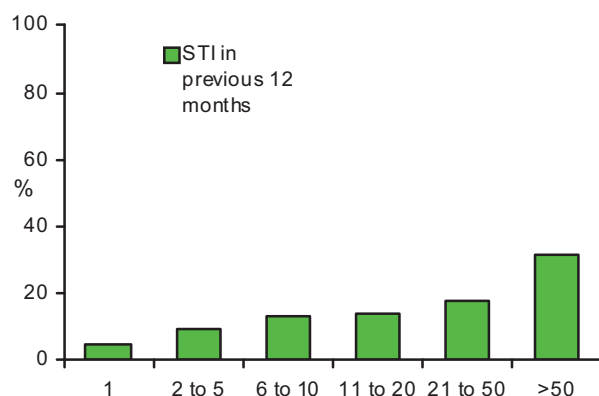


**Table 54. Diagnosed with an STI in the previous 12 months (2008)**

	2008	
	n	%
Gonorrhoea	40	2.9
Chlamydia	47	3.4
NSU	28	2.0
Warts*	33	2.4
Herpes*	36	2.6
Syphilis	28	2.0
LGV	8	0.6
Any of above STIs	139	10.0

Note: 'Not stated' = 144, 147, 150, 149, 153, 149, 161, 138 by round. \* Only related to new diagnosis, not recurring symptoms.

**Figure 85. STI in previous 12 months by number of male partners in previous six months (2008)**



Note: 'Not stated' not shown.

## | Group sex, sex with amyl and methamphetamine

The 2008 survey also contained a new section regarding group sex, amyl use during sex and methamphetamine or “p” use during sex. This is the first time that a question on group sex has been asked, following findings from overseas that MSM engaging in sexually adventurous sex, including group sex, were at elevated risk of HIV infection (primarily because of the higher prevalence of HIV infection among other men who engage in these practices). The 2006 survey provided data on consumption of various recreational drugs (Saxton and Hughes 2008), however for the 2008 survey we limited questions to amyl use and “p” use, and also to consumption of these substances during sex only.

### Group sex

In GAPSS 2008, “group sex” was defined for respondents as “sex involving 4 or more men at the same time (group sex)”. This definition (4 or more) was chosen in order to exclude situations where a male couple has a sexual encounter with a third person, since we were mainly interested in identifying those respondents who engaged in “sexually adventurous” casual sex. In doing so, we recognise that the definition will omit respondents who had “threesomes” with two other casual partners.

Based on this definition, 16.8% of the GAPSS 2008 respondents reported engaging in group sex at least once in the six months prior to survey (Table 55). Approximately equal proportions reported doing this once (7.8%) or between 2-5 times (7.4%), with a small fraction reporting this more often.

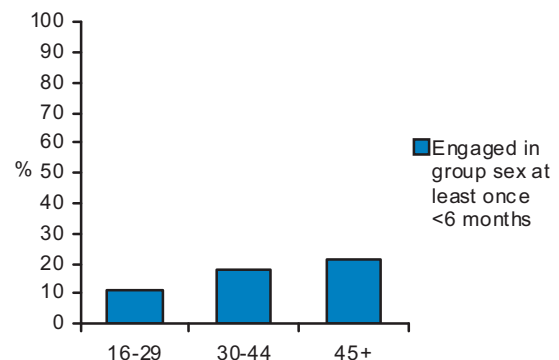
Figure 86 also shows that engaging in group sex at least once in the previous six months was associated with age group. Just over one in ten (10.9%) of those aged under 30 had engaged in group sex in the previous six months, this increased to 21.3% of those aged 45 and over.

**Table 55. Engaged in group sex in the previous six months (2008)**

	2008	
	n	%
No	1191	83.2
Once	112	7.8
2-5 times	106	7.4
6-11 times	12	0.8
12 times or more	11	0.8
Total	1432	100.0

Note: 'Not stated' = 95.

**Figure 86. Had group sex at least once in last six months by age group (2008)**



Note: 'Not stated' not shown.  $P < 0.001$ .

## **Amyl use and methamphetamine use during sex**

In contrast to the 2006 survey which asked about the frequency of consumption of a number of different substances, the 2008 survey focused on two – amyl and methamphetamine – and only in relation to use during sex.

Table 56 shows that 41.6% of all respondents had used amyl during sex at least once in the previous six months. Most of those using amyl had used it more than once (comprising 33.3% of all respondents).

Only a small proportion of respondents had used methamphetamine during sex in the previous six months (6.6%) (Table 57).

It is interesting to compare these results with the findings on frequency of substance use in the 2006 survey in which the recall period was the same (six months) but which was not limited to use during sex. In 2006, 43.5% of all non-missing respondents reported any amyl use, and 9.2% of non-missing respondents had used methamphetamine (Saxton, Dickson and Hughes 2006).

**Table 56. Used amyl when you had sex in the last six months? (2008)**

	2008	
	n	%
No	838	58.4
Once	119	8.3
Twice or more	477	33.3
<b>Total</b>	<b>1434</b>	<b>100.0</b>

Note: 'Not stated' = 93.

**Table 57. Used methamphetamine / "P" when you had sex in the last six months? (2008)**

	2008	
	n	%
No	1341	93.4
Once	32	2.2
Twice or more	63	4.4
<b>Total</b>	<b>1436</b>	<b>100.0</b>

Note: 'Not stated' = 91.



## | Summary

### **Sample**

The 1527 responses to the 2008 Gay Auckland Periodic Sex Survey (GAPSS) represent a 24% increase from the previous 2006 sample of 1228. For 69.5% of participants this was the first time they had taken part in a GAPSS or GOSS survey. There was a slight increase in the proportion of respondents recruited from gay saunas and sex-on-site venues, at 20.3% of the sample in 2008 up from 17.9% in 2006. This most likely reflects an intensification of recruitment efforts at these sites in the 2008 round, rather than an increase in response rates from men approached there.

Compared to previous GAPSS surveys, the most distinctive change was that respondents in 2008 were more likely to be aged 45 and over. Otherwise the general trend for the sample followed that identified for the first three offline rounds – over time samples were more ethnically diverse, more gay identified, but less gay-community attached than in the baseline 2002 survey (Saxton 2009a). Given the different opportunities for social and sexual networking for homosexually active men in 2008 than in 2002, probable general shifts in gay subculture, identity and demographics, and the great effort devoted to keeping the GAPSS recruitment method consistent over time, the changes in the samples likely reflect actual changes in the constituency of the gay social venues themselves.

It must also be borne in mind that respondents recruited through online dating sites in GOSS (the Gay men's Online Sex Survey) at the conclusion of GAPSS – effectively those who were “missed” by the offline recruitment approach in that year – demonstrate yet another demographic profile again (Saxton et al. 2007). It will be important to continue sampling men who have sex with men (MSM) from a variety of sites in this way, and to keep abreast of changes in patterns of socialisation and seeking sex with men, to ensure that the HIV behavioural surveillance programme includes a rich cross-section of MSM. It is also worth stressing that because we recruit purposively from venues such as gay bars and gay saunas, the behavioural findings in this report should not be generalised out to all MSM in Auckland.

### **Testing for HIV, STIs, and HIV status**

One of the most notable findings in the 2008 round was that rates of lifetime testing had increased: 79.0% had tested for HIV at least once, compared to approximately 75% in all previous rounds. Rates of testing in the 12 months prior to survey had also increased, to 45.2% up from 41.7% in 2006. The proportion of the sample that had tested HIV positive remained below 5%, and was 4.3% in 2008. Interestingly, proportionately more respondents who had tested HIV negative at their last test currently believed they were “definitely negative” at the time of survey compared to earlier rounds: this was 74.6% in 2008 compared to 69.4% in 2006.



We have previously released analyses of changes in HIV testing rates in the 12 months prior to survey 2002-2006, and found that these had increased among Māori MSM, bisexual identifying MSM, and MSM reporting more than ten male sex partners in the last six months, but had decreased among Pacific identifying respondents (Saxton et al. 2009a). Also, factors independently associated with never having tested for HIV in the 2006 offline and online surveys included a Pacific or Asian ethnicity, bisexual identity, having been recruited through an online dating site, agreeing that “HIV is a less serious threat than it used to be because of new treatments”, agreeing that “a man who knew he had HIV would tell me he was positive before we had sex”, not knowing that “unprotected anal sex is very risky for HIV”, and not knowing that “HIV remains in your body for life” (Saxton et al. 2009a). The 2008 GAPSS data provide further information on these experiences that can help plan and evaluate HIV services in New Zealand.

Just under a half (46.8%) of respondents had sought testing or treatment for a sexually transmitted infection (STI) in the 12 months prior to survey in 2008, and 10% reported having been diagnosed with one of seven STIs over the previous year.

### ***Sexual relationships, anal intercourse and condom use***

The 2008 data, consistent with previous rounds (Saxton 2009b; Saxton 2010), confirms that patterns in sexual partnering remain complex among respondents. This was true even though a slightly lower proportion of 2008 respondents had engaged in sex with more than 20 male partners in the previous six months (9.8%, down from 16.9% in the baseline 2002 survey). Many respondents reported both regular and casual sex partnering in the six months prior to survey, and much of this appeared to overlap. Concurrent (overlapping) sexual relationships occurred both among men who had a boyfriend and those whose main regular sex partner was described as a fuckbuddy. Respondents reported a variety of beliefs about their main regular sex partner’s HIV testing history and what they thought this man’s actual HIV status was.

Rates of anal intercourse and condom use were described according to the nature of sexual relationships; in this report we distinguished between regular “boyfriend” relationships, regular “fuckbuddy” relationships, and casual sex. There was a statistically significant increase in anal sex among respondents with a fuckbuddy and with casual partners, but this remained stable (and was already high) for boyfriend relationships. There were no significant shifts in condom use over time among the whole sample, with condom use being highest during sex with casual partners and fuckbuddies, and lowest among boyfriends.

When investigating changes in condom use over time between 2002-2008 among GAPSS subgroups, respondents aged 30-44 and those in relationships of unknown seroconcordance reported increasing rates of any unprotected sex with a current boyfriend, and respondents in the highest “sexual activity class” (with more than 20 male partners in the last six months) reported increasing rates of any unprotected sex with casual partners. These data can similarly be compared to previous GAPSS results regarding changes over time and factors associated with unprotected sex (Saxton 2009a; Saxton et al. 2009b).

When surveyed for the first time in 2008 about the last man they had anal sex with, respondents were able to provide rich information about this person's (perceived) characteristics, including age, usual residence, place where they met, perceived sexual activity, ethnicity and HIV status. These items will be included in the next GAPSS and GOSS surveys now that they have been successfully trialled, and the data collected can be compared with the respondents' own characteristics in order to investigate patterns of sexual mixing, an important determinant of HIV epidemic spread.

The 2008 survey also for the first time provided data on group sex (16.8% reported sex with four or more men in the previous six months), amyl use during sex (41.6% in the previous six months) and methamphetamine use during sex (6.6% in the previous six months).

### ***Seeking sex with men***

The proportion of GAPSS respondents who reported they had had sex with a man who was met online in the previous six months was again high (44.5%) compared to the baseline round in 2002 (26.6%). Respondents identified a wide variety of Internet sites used either to seek sex with men (as of February 2008, the most popular was NZDating, but included at least 53 other sites as well) or to socially network (Facebook being the most popular at the time of survey).

Of those respondents who had met a new sexual contact in the six months prior to survey in 2008, the most common source where participants had met at least one contact was on an Internet dating site (48.2%). Interestingly however, when examining the volume of new sexual contacts made overall, the majority of new sexual contacts were made at a gay sauna (26.9%). These results will be biased by the nature of the GAPSS recruitment strategy – purposively recruiting men from gay saunas and cruise clubs – and by the omission of MSM who exclusively socially and sexually network online (GOSS). Nevertheless, when interpreted within these constraints they provide important data that can be used to better target HIV prevention and testing resources.

### ***Attitudes and knowledge***

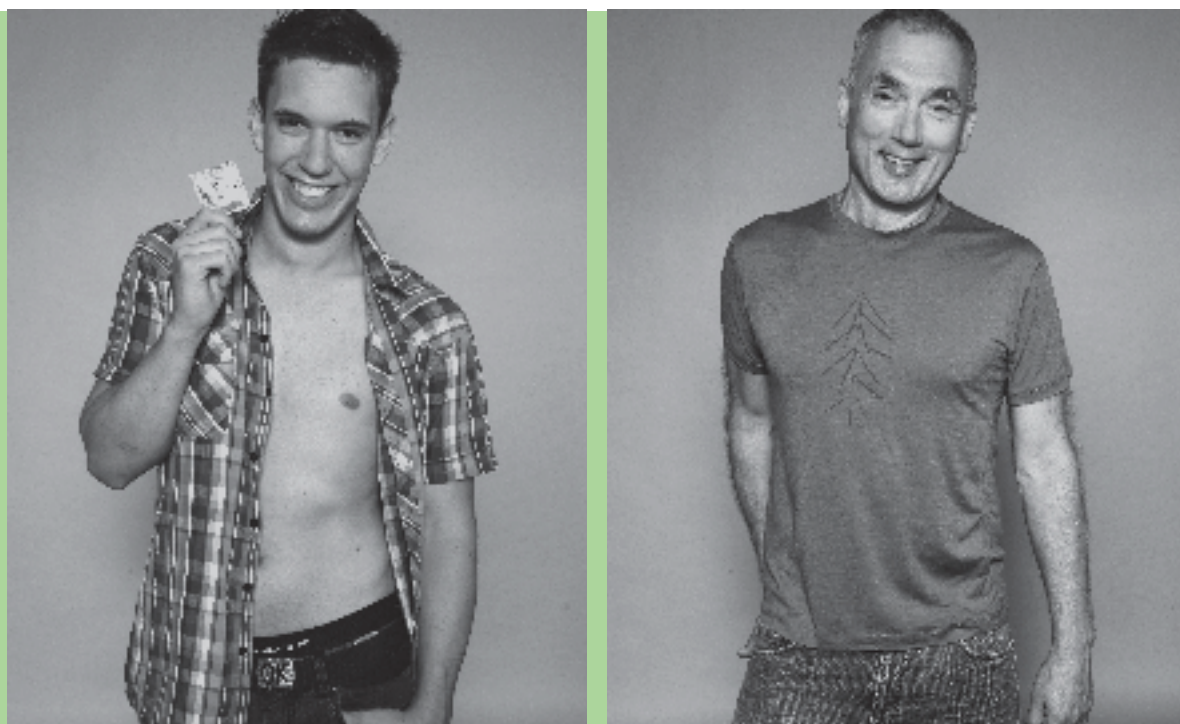
Responses to various attitude items about safe sex and HIV were generally stable over time. Exceptions to this were the statement “I don't like wearing condoms because they reduce sensitivity”, which found declining agreement over time, and the statement “A man who knows he has HIV would tell me he was positive before we had sex”, which found increasing agreement over time. One in ten (10.1%) respondents in 2008 agreed that “the sex I have is not always as safe as I want it to be”, a quarter (25.4%) agreed that “sometimes I feel under pressure not to use a condom”, and 17.2% disagreed that “in the last year I've seen safe sex messages that were relevant to me”. Four knowledge items were repeated from 2006, and none of these showed any significant change.

## | Conclusion

The GAPSS offline behavioural surveillance programme continues to be very well supported by men who have sex with men in Auckland, and, given the scarcity of HIV behavioural research on this population in New Zealand, provides invaluable information to both support and evaluate the delivery of HIV prevention and testing services (Saxton 2009c; UNAIDS/WHO 2000). The consistency of many findings attests to the reliability of the survey programme, and much new data is generated on emerging and under-researched topics affecting this population at greatest risk of HIV infection in New Zealand. It is essential that this offline programme is complemented by the GOSS online survey programme, which includes MSM who mainly seek male sexual partners through Internet dating sites, and also has the advantage of collecting data from MSM nationwide.

The summary findings presented here should be read in conjunction with other analyses already published and disseminated elsewhere, some of which are listed in the references following. Careful comparison of the results from behavioural surveillance, and those from epidemiological surveillance (AIDS Epidemiology Group 2010; McAllister et al. 2008; Saxton 2009a) will also generate a better understanding of patterns in HIV risk among MSM in New Zealand.

The next GAPSS and GOSS data collection is scheduled for February 2011, and will for the first time invite participants to provide an anonymous oral fluid specimen. As specimens will be linked anonymously to responses provided in the GAPSS questionnaire, this will enable the prevalence of overall and undiagnosed HIV infection to be estimated among a community sample of MSM in New Zealand, and follows the estimation of HIV infection among MSM attending sexual health clinics (McAllister et al. 2008).



## | References

- AIDS Epidemiology Group. (2010). *AIDS - New Zealand*. Issue 65. Dunedin: AIDS Epidemiology Group, University of Otago Medical School.
- Anderson, R. & May, R. (1992). *Infectious Diseases of Humans*. Oxford: Oxford University Press.
- Azariah S. (2010). An audit of patients treated for syphilis at Auckland Sexual Health Service. *New Zealand Medical Journal*; 123(1315):55-64.
- Gupta S., Anderson RM. & May RM. (1989). Networks of sexual contacts: implications for the pattern of spread of HIV. *AIDS*; 3:807-818.
- Hughes, A. & Saxton, P. (2006). Geographic micro-clustering of homosexual men: Implications for research and social policy. *Social Policy Journal of New Zealand*. 28: 158-178.
- McAllister S., Dickson N., Sharples K., Reid M., Morgan J., Macdonald EJ. et al. (2008). Unlinked anonymous HIV prevalence among New Zealand sexual health clinic attenders: 2005-2006. *Int J STD AIDS*; 19:752-757.
- Ministry of Health. (2002). *The New Zealand Health Monitor: A 10-year strategic plan for a coordinated national population survey programme*. Wellington: Public Health Intelligence, Ministry of Health.
- Ministry of Health. (2003). *HIV/AIDS Action Plan: Sexual and Reproductive Health Strategy*. Wellington: Ministry of Health.
- Morris, M. & Kretzschmar, M. (1997). Concurrent partnerships and the spread of HIV. *AIDS*; 11: 641-48.
- Paul, C., Wilson, M., Dickson, N., Sharples, K. & Skegg, D. (2000). Enhanced surveillance of HIV infections in New Zealand, 1996-1998. *New Zealand Medical Journal*. Vol. 113, No. 1118: 390-4.
- Righarts, A., et al. (2009). "Prevalence of sexually transmitted infections (STIs) by sexual behaviour among sexual health clinic (SHC) attenders in New Zealand." Paper presented at: Australasian Epidemiological Association Annual Scientific Meeting, 30 Aug – 1 Sept, Dunedin.
- Saxton P. (2009a). *HIV epidemiology and behavioural surveillance among men who have sex with men in New Zealand*. Unpublished PhD thesis, Department of Preventive and Social Medicine, University of Otago.

- Saxton P. (2009b). "The straw that broke the camel's back? Theories of HIV spread, epidemiology, behavioural surveillance and the question of epidemic tipping points in New Zealand." Lecture presented at: The Australian Research Centre in Sex, Health and Society, La Trobe University, May 27, Melbourne.
- Saxton P. (2009c). "Links between epidemiological and behavioural surveillance." Paper presented at: AIDS Epidemiology Group 20<sup>th</sup> Anniversary Colloquium, Nov 11, Dunedin.
- Saxton P. (2010). "Sexually networked: Why community-level processes matter in HIV epidemics." Paper presented at: Wellington Gay Community Forum, Feb 11, Wellington.
- Saxton, P., Dickson, N., Hughes, A. & Paul, C. (2002). *GAPSS 2002: Findings from the Gay Auckland Periodic Sex Survey*. Auckland: New Zealand AIDS Foundation.
- Saxton, P., Hughes, A. & Robinson, E. (2002). Sexually transmitted diseases and hepatitis in a national sample of men who have sex with men in New Zealand. *New Zealand Medical Journal*. 115 (1158).
- Saxton, P., Dickson, N. & Hughes, A. (2004). *GAPSS 2004: Findings from the Gay Auckland Periodic Sex Survey*. Auckland: New Zealand AIDS Foundation.
- Saxton, P., Dickson, N. & Hughes, A. (2006). *GAPSS 2006: Findings from the Gay Auckland Periodic Sex Survey*. Auckland: New Zealand AIDS Foundation.
- Saxton P, Dickson N, Sharples K, Hughes A. (2007). "Holes in the canvas: What can we learn from extending regular behavioural surveillance online?" Paper presented at: 8th International AIDS Impact Conference, Jul 1-4, Marseille, France.
- Saxton P. & Hughes A. (2008). *New Zealand MSM who use recreational drugs report higher rates of STIs*. Research Brief. Auckland: New Zealand AIDS Foundation.
- Saxton P, Hughes A, Dickson N, Sharples K. (2008). "Boyfriends, fuckbuddies and casual sex: The structure of sexual partnering among gay and bisexual men in New Zealand." Paper presented at: 30th Annual New Zealand Sexual Health Society Conference, Aug 28-30, Dunedin.
- Saxton P, Dickson N, Sharples K, Hughes A. (2009a). "HIV testing among gay and bisexual men in New Zealand: Disparities and trends." Paper presented at: 31st Annual New Zealand Sexual Health Society Conference, Oct 15-17, Paihia.
- Saxton P, Dickson N, Sharples K, Hughes A. (2009b). "How often do gay and bisexual men in New Zealand use condoms for anal sex with casual partners, and has this changed over time?" Paper presented at: 31st Annual New Zealand Sexual Health Society Conference, Oct 15-17, Paihia.

Sharples, K., Dickson, N., Paul, C. & Skegg, D. (1996). HIV/AIDS in New Zealand: an epidemic in decline? *AIDS*; 10:1273-8.

UNAIDS/WHO. (2000). *Second generation HIV Surveillance for HIV: the next decade*. UNAIDS/WHO Working Group on Global HIV/AIDS and STI Surveillance: Geneva.





