Tactical dangers

Findings from the United Kingdom Gay Men's Sex Survey 2008

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Original Research Report

Acknowledgments

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- Action for Men <www.action4men.org>
- Albert Kennedy Trust
- Armistead Centre Project <www.armisteadcentre.co.uk>
- Barking & Dagenham PCT Health Promotion Services
- Berkshire East PCT (Slough PCT)
- Bromley PCT (Health Promotion Services) <www.bromley.nhs.uk>
- Brunswick Centre <www.thebrunswickcentre.org.uk>
- Buckinghamshire Hospitals NHS Trust
- Camden PCT – CLASH (Central London Action on Street Health)
- CARESS
- Central Lancashire PCT, Project Oscar (Public Health Directorate)
- Centre for HIV & Sexual Health, Sheffield <www.sexualhealthsheffield.nhs.uk>
- Centre for Public Health, Faculty of Health & Applied Social Sciences, Liverpool John Moores University
- Claude Nicol Centre – Royal Sussex County Hospital
- Colchester Gay Switchboard <www.gayessex.org.uk>
- Cornwall and Isles of Scilly Primary Care Trust (Gay Men's Health Programme)
- County Durham Primary Care Trust Specialist Health Promotion Service <www.countydurham.nhs.uk>
- Dartford & Gravesham NHS Trust (Renton Clinic)
- Derbyshire Friend <www.gayderbyshire.co.uk>
- DHIVerse Cambridge <www.dhiverse.org.uk>
- Eastern and Coastal Kent Primary Care Trust (Health Promotion)
- The Eddie Surman Trust
- Eddystone Trust <www.eddystone.org.uk>
- ELOP (East London Out Project) <www.elop.org>
- Equity Partnership <www.equitypartnership.org.uk>
- Freshwinds <www.freshwinds.org.uk>
- GALYIC
- www.gaydar.co.uk
- www.gaytoz.com
- Gay Advice Darlington & Durham (GADD) <www.gayadvicedarlington.co.uk>
- Gay Men's Health Service (HSE) Dublin
- www.gcn.ie (Gay Community News, Ireland)
- www.gayhealthnetwork.ie (Gay Health Network, Ireland)
- www.gayhealthproject.com (Southern Gay Men's Health Project, Cork)
- Gay Oxford
- Gay Surrey <www.gaysurrey.org>
- Gay Swansea <www.gayswansea.com>
- George House Trust <www.ght.org.uk>
- GMFA <www.gmfa.org.uk>

- GMI Partnership
- <www.gmh.org.uk> (Gay Men's Health Scotland)
- Guy's and St Thomas' Hospital NHS Trust (Lloyd and Lydia clinics)
- Hart Gables
- Healthy Gay Hampshire <www.healthygayhampshire.com>
- Healthy Gay Life <www.hgl.nhs.uk>
- Healthy Gay Nottingham (formerly GAI Project @ the Health Shop)
- Healthy Gay Scotland <www.healthygayscotland.com>
- Heart of Birmingham Teaching PCT
- Hull & ER Sexual Reproductive Healthcare Partnership (Conifer House)
- Inscape LGBT Health Promotion Service (Portsmouth City PCT)
- Lawson Unit, Royal Sussex County Hospital
- Lesbian, Gay & Bisexual Health Project (Devon PCT)
- Lesbian and Gay Foundation (LGF) <www.lgf.org.uk>
- London Lesbian & Gay Switchboard <www.llgs.org.uk>
- Medway & Swale Sexual Health Programme (Check-Out)
- Men4Men Shop (Luton PCT) <www.gay-bedfordshire.co.uk>
- Mesmac North-East (Middlesborough)
- Mesmac North-East (Newcastle-upon-tyne) <www.mesmacnortheast.com>
- Metro Centre Ltd <www.metrocentreonline.org>
- Millivers / Prowler Group <www.puffta.co.uk>
- Mosaic LGBT Youth Project (Brent Youth Service)
- Naz Project London <www.naz.org.uk>
- Neath & Port Talbot Public Health Team <www.wales.nhs.uk>
- NHS Open Road (Greater Glasgow and Clyde)
- NHS Rotherham (Public Health)
- Northamptonshire Lesbian, Gay and Bisexual Alliance (NLGBA)
- North East Lincolnshire PCT (Men's Health Programme)
- North Lincolnshire PCT Specialist Health Promotion Service
- Outrite (Crewe)
- OutWest <www.outwest.org.uk>
- Over The Rainbow (Dorset Gay Men's Health) <www.rainbowbournemouth.co.uk>
- PACE
- www.pinknews.co.uk
- www.pinkpaper.com
- www.pinkweddings.biz
- Positive East <www.positiveeast.org.uk>
- www.positivenation.co.uk / www.talentmedia.org
- Powys Public Health Team (National Public Health Service for Wales, Brecon)
- Q:Alliance (formerly Qspace, Buckinghamshire Lesbian & Gay LINK) <www.qalliance.org.uk>
- www.queerid.com
- www.rainbow-project.org
- Shropshire Buddies
- Somerset Gay Men's Health Project
- Southampton City PCT Health Promotion
- South East Coast SCG (formerly Adur, Arun & Worthing PCT)
- South Staffordshire MESMEN Project <www.mesmen.co.uk>
- South West Essex PCT
- St. Hellier Hospital (Dept of GU Medicine), Epsom and St Helier NHS Trust
- Staffordshire Buddies <www.staffordshirebuddies.co.uk>
- Stockport Centre for Health Promotion (Stockport Primary Care Trust)
- Summit House Support Limited (Dudley)

- Tameside & Glossop Centre for Sexual Health (Crickets Lane)
- Teesside Positive Action (Middlesbrough)
- Telford & Wrekin PCT
- TEN Sexual Health Promotion Unit (Norwich City Council)
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- Terrence Higgins Trust Cymru (Cardiff)
- Terrence Higgins Trust Cymru (Swansea)
- Terrence Higgins Trust East (Colchester)
- Terrence Higgins Trust East (Southend-on-Sea)
- Terrence Higgins Trust LADS (London)
- Terrence Higgins Trust Lighthouse Kings London
- Terrence Higgins Trust Lighthouse South London
- Terrence Higgins Trust Lighthouse West London
- Terrence Higgins Trust Midlands (Birmingham)
- Terrence Higgins Trust Midlands (Coventry)
- Terrence Higgins Trust Midlands (Shropshire)
- Terrence Higgins Trust Midlands (Wolverhampton)
- Terrence Higgins Trust National Gay Men's Health Promotion Team <www.tht.org.uk>
- Terrence Higgins Trust Oxfordshire
- Terrence Higgins Trust South (Brighton)
- Terrence Higgins Trust South (Eastbourne)
- Terrence Higgins Trust Thames (Woking)
- Terrence Higgins Trust West (Bristol)
- Terrence Higgins Trust West (Swindon)
- Terrence Higgins Trust Wirral (formerly Jigsaw Centre, Birkenhead)
- TRADE Sexual Health <www.tradesexualhealth.com>
- Turning Point Hungerford Drug Project
- www.ukblackout.com
- www.ukmoc.com (Men of colour)
- Walsall Men's Health Project
- West Kent PCT Sexual Health Promotion (Maidstone)
- West London Gay Men's Project <www.westlondongmp.org.uk>
- Wightout Helpline
- Wiltshire & Swindon Men's Sexual Health
- Yorkshire Mesmac <www.mesmac.co.uk>

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www.gmss.org.uk

CHAPS Terrence Higgins Trust

www.tht.org.uk

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www.sigmaresearch.org.uk/go.php/reports/report2010b

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Executive summary

This report outlines the main findings of Vital Statistics 2008 – our twelfth annual national *Gay Men's Sex Survey* (GMSS). The community-based survey targeted gay men and bisexual men living in the UK and Ireland, and concerned HIV infection, sex between men, HIV prevention needs and service uptake.

Chapter 1 describes the way in which we undertook the survey. Recruitment occurred from 25th July to 20th October 2008 and was undertaken by Sigma Research in partnership with 105 organisations across the United Kingdom and the Republic of Ireland. This chapter explains how the sample was recruited and shows what exclusion criteria were applied to the data prior to analysis.

Chapter 2 describes the demographic profile of the 7,461 men recruited to the survey. It describes the final sample in terms of their: country and region of residence; age; ethnicity; education; sexual identity and gender of sexual partners; outness; relationship status including civil partnerships and marriage; and household.

Chapter 3 describes current perceptions of HIV status, experiences and recency of HIV testing, testing settings and preferences for future HIV testing provision and changes in rates of HIV testing from previous surveys.

- **The proportion of gay men and bisexual men reporting ever having tested for HIV is at its highest ever level, and remains on an upward trend. However, there remains over a quarter of men who have never tested for HIV.**

Many men with undiagnosed HIV infection have probably tested negative for HIV at some point in the past. This means that it is not only the overall level of men who have ever tested that is important but also how frequently those with a higher sexual risk profile re-test.

- **Less than half of the respondents had been tested for HIV in the last year – a long way off the recommended target of 100%.**

Given that the prevalence of undiagnosed HIV still stands at around a third of those infected, it is crucial that recent successes in raising testing rates are harnessed and that the drive for HIV testing continues.

Living with diagnosed HIV remains most common among:

- **men in London and in the North West of England;**
- **men with lower educational qualifications;**
- **men with higher numbers of male sexual partners (especially those with 30 or more per year);**
- **black men and men of non-British white ethnicities.**

Interventions should aim to over-serve men who fall into one or more of these groups.

Chapter 4 describes sexual risk and precaution behaviours including the prevelance and patterns of sexual and other behaviours within which HIV transmission events occur. It describes several parameters for the sexual activity of men who have been homosexually active in the last year. These measures are also presented for the population groups outlined in preceding chapters.

The following sexual behaviours were all common in the last year:

- **ejaculating into a partner's mouth (62.7%),**
- **taking ejaculate in the mouth (57.7%),**
- **unprotected insertive anal intercourse (43.1%), and**
- **unprotected receptive anal intercourse (41.8%).**

For all four of these behaviours it is clear that some men choose to engage in them only when they are having sex with men they think have the same HIV status as themselves, or they choose to avoid them when they know they and their partner have a different status. For example, although 41.5% of men whose last test was HIV negative had receptive UAI in the last year, far fewer (16.0%) had done so with a partner of unknown status and only 2.0% had done so with a man they knew to have HIV. Similarly, while 51.7% of men diagnosed with HIV had insertive UAI in the last year, fewer (34.8%) had done so with men whose status they did not know and fewer again (14.0%) had done so with a partner they knew or thought to be HIV negative.

However, engagement in unprotected anal intercourse with partners of unknown status is still very common, and engagement with a known HIV discordant partner is still relatively common.

Sexual behaviours most likely to result in acquiring HIV are most common among the under 20s, while those most likely to pass on HIV are most common among men in their 30s. These patterns partly explain why HIV is passed down the age range.

In terms of other inequalities in sexual risk behaviours, men with lower levels of education remain most likely to engage in most kinds of risk behaviours and should remain a priority for interventions.

Chapter 5 considers HIV prevention needs assessed in the survey. These indicators include prospective reaction to positive HIV status disclosure from a sexual partner, knowledge related to the use of nitrite inhalants (poppers) and anabolic steroid use. These indicators are presented for the population groups outlined in preceding chapters.

The chapter concludes that poppers may be making a significant contribution to HIV incidence among men who have sex with men in the UK. More than half of the respondents did not know that poppers increase risk and may therefore be taking additional risks in ignorance. We suggest continuing education on this topic is needed.

1 Introduction and methods

1.1 CONTENT OF THE REPORT

This research report outlines the main findings of *Vital Statistics* 2008 – which was the twelfth national *Gay Men's Sex Survey* (GMSS). The survey was carried out from 25th July to 20th October 2008 by Sigma Research in partnership with 105 individual organisations across the United Kingdom and the Republic of Ireland (see *Acknowledgements* for a full list of collaborators).

The information in this report is about HIV infection, sex between men, HIV prevention needs and service uptake. The intended audience includes people involved in planning and delivering programmes to address the HIV prevention needs of homosexually active men. It complements our annual GMSS reports from 1997 to 2007 (Hickson *et al.* 1998; Hickson *et al.* 1999; Weatherburn *et al.* 2000; Hickson *et al.* 2001; Reid *et al.* 2002; Hickson *et al.* 2003a; Reid *et al.* 2004; Weatherburn *et al.* 2005, Hickson *et al.* 2007; Weatherburn *et al.* 2008; Hickson *et al.* 2009).

This chapter provides the background to the survey and explains how the sample was recruited. It also shows what exclusion criteria were applied to the data collected, prior to the analysis in the rest of the report.

Chapter 2 describes the final sample of 7,461 men in terms of their: country and region of residence; age; ethnicity; education; sexual identity and gender of sexual partners; outness; relationship status including civil partnerships and marriage; and household.

Chapter 3 describes current perceptions of HIV status, experiences and recency of HIV testing, testing settings and preferences for future HIV testing provision and changes in rates of HIV testing from previous surveys. It describes variation in these indicators and behaviours for the population groups outlined in Chapter 2.

Chapter 4 is concerned with the volume and pattern of sexual and other behaviours within which HIV transmission events occur. It describes several parameters for the sexual activity of respondents who have been homosexually active in the previous year. These measures are also presented for the population groups outlined in preceding chapters.

Chapter 5 reports on HIV prevention needs assessed in the survey. These indicators include prospective reaction to positive HIV status disclosure from a sexual partner, knowledge related to the use of nitrite inhalants (poppers) and anabolic steroid use. These indicators are presented for the population groups outlined in preceding chapters.

1.2 BACKGROUND AND DEVELOPMENT OF THE TWELFTH NATIONAL *GAY MEN'S SEX SURVEY*

The *Gay Men's Sex Survey* uses a self-completion questionnaire to collect a limited amount of information from a substantial number of men. Sigma Research first carried out GMSS at the London Lesbian & Gay Pride festivals in 1993, 1994 and 1995. No survey was undertaken in 1996. Since 1997, the survey has been undertaken annually twelve times, with funding from Terrence Higgins Trust as part of the CHAPS HIV prevention programme for England.

During this time GMSS has expanded across England and incorporated Welsh residents (since 2000), Scottish residents (since 2001) and Northern Irish residents (since 2002). Since 2003 it has occurred across the United Kingdom and the Republic of Ireland. Data from men living in the Republic of Ireland is collected on behalf of the Ireland Gay Men's Health Network and is reported elsewhere (Divine *et al.* 2006; McCartney *et al.* 2009).

The 2008 questionnaire was designed in collaboration with the health promoters that subsequently participated in recruitment. In early June 2008 we wrote to all agencies who had recruited men to GMSS in 2007 or 2006 and invited them to prioritise and review the inclusion and replication of previously asked GMSS questions from a rough draft of the questionnaire and to suggest other questions or topics for inclusion. We had feedback from seventeen agencies or organisations.

Piloting of the questionnaire occurred in two gay bars in South London. Ten bar patrons were asked to complete the survey and were then interviewed for approximately 30 minutes to gauge how they read and understood each question and the associated instructions. The final questionnaire was developed from pre-testing interviews and feedback from collaborators.

1.3 RECRUITMENT METHODS

Since 1999 the questionnaire has been produced as a small (A6) booklet which is self-sealing for Freepost return. In each of the ten years since, 20-35,000 copies of the booklet have been directly distributed to gay men and bisexual men by a range of gay and HIV health promotion agencies. In 2008 the booklet was made available to all HIV health promoters who work with gay men, bisexual men or other homosexually active men across England and Wales but not Scotland and Ireland. Almost 200 health promotion agencies were invited to distribute booklets to the men they served. This included all those agencies listed in *Nambase*® (NAM 2004) as undertaking health promotion with gay men and bisexual men, and all agencies that distributed booklets in previous years.

In total, 35,000 booklets were sent out to 90 agencies many of which had distributed booklets in previous years. Recruitment was open for a twelve week period from 25th July to 20th October 2008. Booklets were returned to Sigma Research marked as distributed by 51 different agencies, including 12 service centres of Terrence Higgins Trust and 2 of Mesmac North East (counted as a single agency each). The average (median) number of booklets returned by each collaborator was 19 (median, range 1 to 892). We received twenty or more booklets from 24 different agencies. In January, 2010, these agencies received a targeted data report on the men they had recruited. Overall, 3,268 booklets were returned via Freepost, giving a return rate of 9.3% of those booklets distributed by Sigma Research to collaborating agencies.

Since 2001, we have used the internet as a setting for the questionnaire and as a method of recruitment to the survey. Previous online versions of GMSS (Reid *et al.* 2002, Hickson *et al.* 2003a; Reid *et al.* 2004) have demonstrated that the internet method recruits larger numbers of men in demographic groups to which smaller numbers were recruited using clipboards at Pride-type events or using the booklet, especially behaviourally bisexual men, men under 20 years or over 50 years of age, and men from minority ethnic groups.

In 2008 the survey was available for completion online via a specific website in English only.

The questionnaire contained the same 55 questions as the booklet with another 18 added. The additional questions concerned whether respondents had seen a number of HIV prevention and 'safer sex' interventions, including adverts, leaflets and magazines and websites. These additional questions have been reported elsewhere (Reid 2009).

The 2008 questionnaire was prepared and hosted using www.demographix.com an online internet survey instrument. The design of the online survey allowed data to be captured and viewed as soon as the respondent pressed 'submit' at the end. The online version was available for completion for the same 12 weeks. Overall, we received 5,591 responses online.

Paid for promotion was undertaken with six UK commercial websites / organisations – www.gaydar.co.uk, www.puffta.co.uk (Millivers/ Prowler media group), www.ukmoc.com, www.pinkpaper.com, www.pinknews.co.uk, and www.positivenation.co.uk (Talent media group). A further 35 gay community, HIV and health promotion websites promoted the survey at no cost (see

Acknowledgements). We received twenty or more returns from 20 different websites. In January 2010, web-hosts from these sites received a targeted data report on the men they had recruited online.

1.4 EXCLUSIONS

In total there were 1398 questionnaires returned but not included in the analysis, which represents one in six (15.8%) of the original sample. The table below shows the reasons for exclusions, separately for booklet and online recruits.

The proportion of booklet returns excluded from the data analysis was 5.2% (171 returns). In the nine years we have used the booklet method this proportion has varied between 4.2% (in 2005) and 13.4% (in 1999). This proportion varies because the precise methods used by distributors, and the actual agencies distributing the booklet varies from year to year.

The proportion of online recruits excluded was 22.0% (1227 returns). In the eight years we have undertaken the survey online this proportion has varied between 15.1% (in 2003) and 30.9% (in 2001).

All questionnaires returned (n=8859)	**Booklet**	**Web**	**TOTAL**
Total returns	3268	5591	8859
Gender unknown	13	0	13
Completed by a female	3	98	101
No evidence on where they lived	2	0	2
Lived outside UK or Republic of Ireland	0	334	334
Respondent aged under 14	0	2	2
No evidence of sex with men in the previous year and no gay, bisexual or other similar sexual identity	105	95	200
Already completed the survey	45	100	145
Lived in Republic of Ireland	0	598	598
Insufficient questions completed	3	0	3
Sample size: Men with homosexual experience in the last year or a gay, bisexual or similar identity	3097 (94.8%)	4364 (78.0%)	7461 (84.2%)

Using a question on country of residence and a question on local authority of residence, 16.7% of the online sample were excluded for non-UK residence (compared to 31.2% in 2007, 23.4% in 2006, 16.2% in 2005, 12.8% in 2004 and 13.2% in 2003) but none of booklet-recruited men (compared to <0.1% in 2007, 2.9% in 2006, 0.8% in 2005, 1.9% in 2004 and 0.5% in 2003). However, of those that lived outside the UK, two thirds lived in the Republic of Ireland and were deliberately recruited to be reported elsewhere.

2 Demographic description

The final sample includes 7,461 men aged 14 or over, living in the UK, who had sex with a man in the last year and / or had a non-heterosexual sexual identity, and who had not completed the survey already in summer 2008. One hundred and twenty-four men (1.7% of whole sample) identified as trans-men.

This chapter describes the group of men taking part in the survey using the following variables: area of residence; age; ethnicity; education; sexual identity and gender of sexual partners in the last year; proportion of friends, family and workmates aware of their attraction to men (outness); relationship status, including civil partnership and marriage; and household. In the following chapters we look at how indicators of HIV testing, risk and precaution behaviours and prevention needs vary across these characteristics.

2.1 COUNTRY AND AREA OF RESIDENCE

Men were asked *Which country do you currently live in?* The proportions of men taking part through the internet and the booklet living in each country is shown below, as is the distribution of the total UK male population for comparison (there is currently no Office for National Statistics (ONS) estimate of the distribution of men who have sex with men in the UK).

Which country do you live in? (n=7461, missing 0)	**% overall**	**% by recruitment method**		**ONS mid-2008 estimate of total UK male population %**
		Internet (n=4364)	**Booklet** (n=3097)	
England (n=6703)	89.8	85.8	95.6	84.0
Wales (n=380)	5.1	6.0	3.9	4.8
Scotland (n=276)	3.7	6.0	0.4	8.3
Northern Ireland (n=102)	1.4	2.2	0.2	2.9

Booklet distribution occurred only in England and Wales and only seventeen men living in Scotland or Northern Ireland completed one. If we compare the country distribution of the internet sample to that of all males in the UK, it is fairly similar, but with slightly fewer men in the sample living in Northern Ireland and Scotland and slightly more resident in England. However, we cannot say how it compares to the homosexually active male population.

The area of residence questions were designed to allow us to allocate respondents to a Primary Care Trust with confidence, while also avoiding asking men for information that may identify them. Men were asked *Which Local Authority do you live in?* and were told *The local authority bills you for council tax. If you don't know your local authority, write in the city/town you live in*. They were also asked *What is the first half of your post-code and the first digit of the second half? (eg. SA16 0, M1 7, SW9 1, DE1 3)*. From these answers men were allocated to Primary Care Trusts and then grouped into Strategic Health Authorities. Survey responses from groups of men in these smaller areas are available online at www.gmss.org.uk.

In the rest of this report we use Wales, Scotland, Northern Ireland and the ten English Strategic Health Authorities to make geographic comparisons. The following table shows the sub-sample sizes and the geographic distribution of the internet and booklet sub-samples.

Country and SHA of residence for England (n=7349, missing 112)	% overall	% (n) by recruitment method	
		Internet (n=4305)	Booklet (n=3044)
All England (n=6591)	89.8	86.6 (3774)	95.5 (2907)
East of England (n=451)	6.1	5.4 (324)	7.1 (217)
East Midlands (n=442)	6.0	4.4 (191)	8.2 (251)
London (n=2372)	32.3	32.6 (1404)	31.8 (968)
North East (n=202)	2.7	2.4 (104)	3.2 (98)
North West (n=667)	9.1	9.0 (388)	9.2 (279)
South Central (n=328)	4.5	5.2 (222)	3.5 (106)
South East Coast (n=637)	8.7	7.2 (308)	10.8 (329)
South West (n=534)	7.3	7.7 (330)	6.7 (204)
West Midlands (n=471)	6.4	6.7 (287)	6.0 (184)
Yorkshire & Humber (n=487)	6.6	5.0 (216)	8.9 (271)
All Wales (n=380)	5.1	6.0 (260)	3.9 (120)
All Scotland (n=276)	3.7	6.1 (264)	0.4 (12)
All Northern Ireland (n=102)	1.4	2.3 (97)	0.2 (5)

The respondents were widely distributed across the UK, with a third living in London. Overall, 41.5% of respondents completed the survey using the booklet. This proportion was highest in the East Midlands (56.8%) and Yorkshire & Humber (55.6%) where our health promotion collaborators were most active, and lowest for Scotland (4.0%) and Northern Ireland (4.9%) where booklet distribution did not take place.

2.2 AGE

Respondents were aged between 14 years and 83 years, with a median age of 35 years (mean 35.7, standard deviation 12.2). As in previous years the booklet sub-sample (age range 14-81, median 35, mean 36.4, standard deviation 12.4) were slightly but significantly older than the online sub-sample (range 14-83, median 34, mean 35.3, standard deviation 12). The following table shows the age profile in five-year bands, as well as the profile of the internet and booklet sub-samples.

Age groups (n=7444, missing 17)	% overall	% (n) by recruitment method		% Comparison groups
		Internet (n=4362)	Booklet (n=3082)	
14 – 19 years old (n=433)	5.8	6.5 (282)	4.9 (151)	**5.8**
20 – 24 years old (n=1142)	15.3	15.9 (693)	14.5 (449)	**30.2**
25 – 29 years old (n=1107)	14.8	14.8 (644)	14.9 (463)	
30 – 34 years old (n=1026)	13.8	13.7 (597)	13.9 (429)	**28.0**
35 – 39 years old (n=1056)	14.2	14.3 (622)	14.0 (434)	
40 – 44 years old (n=961)	12.9	12.8 (560)	12.9 (401)	**22.4**
45 – 49 years old (n=709)	9.5	9.4 (411)	9.6 (298)	
50 – 54 years old (n=407)	5.5	5.3 (232)	5.7 (175)	**13.6**
55 – 59 years old (n=278)	3.7	3.5 (154)	4.0 (124)	
60 years old or over (n=325)	4.4	3.8 (167)	5.1 (158)	

In the remainder of this report we group men into the five age groups show in the right hand column of the table: 14-19 years (under 20), the 20s, the 30s, the 40s and 50 and over.

2.3 ETHNICITY

Men were asked *What is your ethnic group?* and were invited to tick one of the sixteen categories from the 2001 UK Census question. The following table shows the number of respondents in each of the sixteen ethnicity categories in the 2008 survey (n=7436, missing 25) and in the previous four surveys for comparison.

Ethnic groups		% GMSS 2004 (n=15975)	% GMSS 2005 (n=16371)	% GMSS 2006 (n=12038)	% GMSS 2007 (n=6195)	% GMSS 2008 (n=7436)
White	White British	82.2 (13,124)	81.3 (13,305)	79.4 (9,556)	78.9 (4,886)	78.8 (5,858)
	Irish	2.9 (470)	3.1 (510)	3.2 (391)	3.2 (199)	3.4 (256)
	Other white	7.9 (1,275)	8.3 (1,360)	9.8 (1,179)	9.5 (587)	9.3 (695)
Black / black British	Caribbean	0.7 (113)	0.8 (126)	0.7 (87)	0.9 (54)	0.8 (62)
	African	0.5 (78)	0.6 (96)	0.5 (66)	0.7 (46)	0.6 (45)
	Other black	0.2 (29)	0.1 (21)	0.1 (12)	0.2 (13)	0.2 (13)
Asian / Asian British	Indian	1.1 (171)	1.2 (194)	0.9 (113)	1.2 (74)	1.5 (114)
	Pakistani	0.5 (82)	0.5 (84)	0.4 (43)	0.4 (26)	0.5 (36)
	Bangladeshi	0.1 (10)	0.1 (14)	<0.1 (5)	0.1 (7)	0.2 (13)
	Other Asian	0.3 (53)	0.5 (77)	0.3 (35)	0.2 (13)	0.3 (21)
Dual Ethnicity	White & black Caribbean	0.6 (89)	0.6 (103)	0.7 (85)	0.7 (44)	0.7 (53)
	White & black African	0.2 (37)	0.2 (34)	0.3 (35)	0.2 (13)	0.3 (24)
	White & Asian	0.6 (89)	0.6 (98)	0.7 (81)	0.6 (39)	0.6 (41)
	Other mixed	0.6 (89)	0.6 (99)	0.7 (85)	0.7 (46)	0.6 (47)
Chinese		0.8 (131)	0.8 (127)	1.0 (120)	0.9 (55)	0.6 (48)
All other ethnicities		0.8 (135)	0.8 (123)	1.2 (145)	1.5 (93)	1.5 (110)

In the final sample 78.8% (n=5858) were white British, the ethnic majority against which minority groups are compared. The next largest group was the varied group of men from white ethnicities other than British (12.8%, n=951, including 3.4% (n=256) who were Irish, the largest single ethnic minority). The other comparison groups are black (1.6%), Asian (2.5%), men of dual or mixed ethnicities (2.2%) and men from all other ethnic group (2.1%).

The proportion of men that are from each ethnic minority has stayed fairly stable, while overall the proportion of GMSS respondents who are from visible ethnic minorities (that is, all groups except white) has risen slightly every year for the past four years.

2.4 EDUCATION

Men were asked *Which of the following educational qualifications do you have?* and instructed to tick one each of: *I have no educational qualifications*; *O-levels / CSE / GCSE*; *A-levels or equivalent*; *Degree or higher*; or *Other qualification*. Those who indicated other qualifications were asked what they were.

Men were allocated to one of three groups on the basis of their highest educational qualification. Those with no qualifications (5.1%) or O-levels / CSE / GCSE were classified as having 'low' educational qualifications (22.6% in total). Those who indicated a degree or greater were classified as having 'high' (50.8%) educational qualifications. Almost all the remaining men were classified as having 'medium' educational qualifications (26.6%), including all those with A-levels or equivalent and the majority of those with vocational or trade qualifications.

Educational qualifications (n=7404, missing 57)	**% overall**	**% (n) by recruitment method**	
		Internet (n=4353)	**Booklet** (n=3051)
Low (n=1673)	22.6	19.2 (834)	27.5 (839)
Medium (n=1968)	26.6	25.9 (1128)	27.5 (840)
High (3763)	50.8	54.9 (2391)	45.0 (1372)

Men who completed the survey online were significantly more likely to have high qualifications than those who completed the booklet (54.9% compared to 45.0%).

2.5 SEXUAL IDENTITY AND GENDER OF SEXUAL PARTNERS

The sample consists of men who had sex with another man in the last year, and men who had not done so but who identified as gay, bisexual or some other non-heterosexual sexual identity. The majority, 93.3% (n=6937), had sex with a man in the last year, including 6.6% (n=493) who also had sex with a woman. Only a small number of men had sex with a woman but not a man (0.7%, n=49) but a much larger proportion had sex with no one (6.1%, n=451). Overall 7.3% (n=542) had sex with a woman in the last year.

Compared with online recruited men, booklet recruits (who better approximate the clients of our health promotion collaborators) included a higher proportion who had sex with men only (87.8% vs. 85.9%) and fewer behaviourally bisexual men (5.7% vs. 7.3%); slightly fewer men who had sex only with women (0.6% vs. 0.7%); and slightly fewer men who had no sex (6.0% vs. 6.1%) in the last year. This suggests that relative to all men who have sex with men, HIV health promotion is disproportionately encountered by exclusively homosexually active men.

Men were asked *What term do you usually use to describe yourself sexually?* and were offered four options. Most men indicated *gay* (85.1%, n=6322), followed by *bisexual* (9.1%, n=673), then *I don't usually use a term* (5.0%, n=376) and *any other term* (0.8%, n=59).

The men who indicated *any other term* were asked to *say what?*. The most common response was queer (n=24), followed by homosexual (n=9), straight (n=3) and bi-curious (n=3). All of the following terms were offered by one or two men: sodomite; homo-romantic asexual: normal: up for anything: trans straight woman: open minded: male – feminine sexuality: me: cellibut – I like fish: pretty boy: 3/4 gay – 1/4 straight: I am who I am: pre op trans: same sex attracted: pansexual / queer: depends on mood – 70% gay: transvestite: sexual: open preference: queer-bent: greedy: heterosexual: bi: gay but not sexual: queen: man who has sex with men: poof: I am what I am: batty boy: just sexual: and Bi TV.

As we would expect, sexual identity was strongly but not perfectly associated with the gender of men's sexual partners. The following table shows the proportion of respondents indicating each

sexual identity, with each type of sexual partners, and the proportions with each combination of these answers.

Gender of sexual partners in the last year (n=7406, missing 55)	% overall	% by sexual identity			
		Gay (n=6302)	Bisexual (n=669)	Don't usually use a term (n=376)	Any other term (n=59)
Men only	86.6	92.4	38.4	75.8	78.0
Men and women	6.6	1.3	46.2	24.2	15.3
Women ony	0.7	0.1	6.4	0.0	0.0
No partners	6.1	6.1	9.0	0.0	6.8

The majority of gay identified men (92.4%) had sex with men only compared with 38.4% of bisexual men who, conversely, were much more likely to have had sex with both men and women (46.2%) compared with the gay men (1.3%). Slightly more bisexual men (9.0%) had no sex in the last year compared with gay men (6.1%).

Black men were significantly less likely to identify as gay (65.8%) compared to white British men, (86%), white other (86.1%), or mixed ethnicity men (82.9%). However, black men and Asian men were more likely to identify as bisexual (18.3% and 18.1% respectively) than were white British (8.5%) or white other (8.9%) ethnicity men. Men aged over 50 were less likely to identify as gay (77.8%) and more likely to identify as bisexual (13.8%) than were men younger than 50.

2.6 OUTNESS

Respondents were asked *What proportion of close family, friends and workmates know that you are gay, bisexual and / or attracted to men?* For each group they were asked to use a five point scale as shown in the table below.

Proportion aware of attraction to men	% (n) Close family (n=7368)	% (n) Friends (n=7353)	% (n) Workmates (n=7200)
All or almost all	62.2 (4580)	71.8 (5280)	56.2 (4043)
More than half	6.4 (470)	8.2 (604)	8.8 (631)
About half	4.3 (315)	4.9 (358)	6.3 (452)
Less than half	5.2 (386)	5.3 (393)	6.5 (471)
Few or none	21.9 (1617)	9.8 (718)	22.3 (1603)

Although community recruited samples are thought to be, on the whole, more 'out' than other homosexually active men, overall less than half (46.3%) of all respondents indicated 'all or almost all' to all three groups. Men were more likely to be out to their friends than to their family, and were least likely to be out to their workmates. Almost a quarter (22.3%) of respondents were out to few people or no one at work.

Booklet respondents were more likely than internet respondents to be out to all or almost all of their family (65.7% compared to 58.3%) and all or almost all of their workmates (58.7% compared to 51.0%).

Men who identified as bisexual were significantly less likely than gay identified men to be out to all or almost all of their close family (19.6% compared to 67.9%), their friends (22.7% compared to 78.3%), and their workmates (14.0% compared to 60.6%).

Significantly fewer black men and Asian men were out to all or almost all of their family (32.5% and 24.5% respectively) than was the case for white British men (64.2%). Similarly, 47.5% of black men and 37.0% of Asian men were out to all or almost all of their friends, compared to 72.7% of white British men. Only 36.7% of black men and 32.1% of Asian men were out to all or almost all of their workmates, compared to 55.5% of white British men.

Men aged under 20 were significantly less likely to be out to all or almost all of their family (42.3%) than was the case for men in their 20s (59.9%), 30s (66.3%), 40s (66.3%), and over 50s (55.0%). Men aged over 50 were less likely to be out to all or almost all of their workmates (40.8%) than was the case for men under 20 (47.6%), in their 20s (58.1%), 30s (58.6%), and 40s (53.4%).

2.7 RELATIONSHIPS INCLUDING CIVIL PARTNERSHIPS AND MARRIAGE

Men were asked *Do you currently have one (or more) regular male sexual partners?* Half (50.9%, n=3780) reported that they did. Respondents who were younger than 20 were less likely to have a regular male partner than other age groups. Men who identified as bisexual were less likely to have a regular male partner than those who identified as gay (39.9% compared to 52.4%). There was no significant difference according to ethnicity.

Those who had a regular partner were asked *How long have you been having sex with your regular sexual partner? (If you have more than one regular partner tell us about the longest relationship)*. On average, those who currently had a regular partner had been having sex with them for 4 years 11 months (range 1 month to 63 years).

To establish men's legal partnership status they were asked *Are you currently...* and invited to indicate one of the options in the table below, which also shows the proportion giving each response. (A small number of men who said they were married in other legal jurisdictions were re-coded to Civil Partnership.)

Civil partnership & marriage (n=7367, missing 94)	**% of all**	**% (n) by recruitment method**	
		Internet (n=4348)	**Booklet** (n=3019)
In a civil partnership with a man	8.7	8.9 (385)	8.4 (254)
In a marriage with a woman	3.8	4.7 (204)	2.6 (79)
In neither of these	87.5	86.5 (3759)	89.0 (2686)

More than twice as many men said they were in a civil partnership as were married, but the majority were in neither of these institutions. Men recruited online were more likely to be in a marriage with a woman than those recruited via the booklet (4.7% compared with 2.6%). Gay identified men were much more likely to be in a civil partnership than men who identified as bisexual (9.7% compared to 2.3%) while the latter were much more likely to be in a marriage with a woman (25.3% compared to 1.2%). Black men were significantly less likely than men of all other ethnicities to be in a civil partnership.

Men were also asked *Have you* ... and were invited to tick as many of the life events listed below as applied.

Civil partnership & marriage (n=7237, missing 224)	**% of all**	**% (n) by recruitment method**	
		Internet (n=4290)	**Booklet** (n=2947)
Had a civil partnership dissolved	0.9	0.8 (35)	1.0 (29)
Been divorced from a woman	7.6	8.0 (344)	7.7 (226)
Survived a civil partner who has died	0.4	0.4 (17)	0.5 (14)
Survived a wife who has died	0.7	0.7 (28)	0.7 (22)
None of the above	90.5	90.5 (3881)	90.4 (3665)

In keeping with what we might expect given the relatively short time civil partnerships between men have been available, very few men reported that they have ever had a civil partnership dissolved (0.9%, n=64), while 7.6% (n=570) had been divorced from a woman. The differences in responses between internet and booklet recruited men were not significant.

2.8 HOUSEHOLD

Men were asked *Who do you live with?* and asked to tick all that applied from the following list: *I live by myself; male partner; female partner; children; other family members; friends;* and *other people*. Those who indicated either *other family* or *other people* were asked to say who.

Overall, a third (35.4%, n=2638) indicated they lived alone. Slightly fewer (27.1%, n=2019) lived with a male partner and 3.8% (n=283) lived with a female partner. A small number of men (n=8, 0.1% of the entire sample) lived with both male and female partners. In addition, 1.7% (n=125) lived with children. Of these, 56% also lived with a female partner and 17.6% lived with a male partner. A quarter (26.4%) of those who lived with children did not live with a partner.

Other family members was selected by 13.8% (n=1026), including parents, grandparents, uncles and aunts, siblings and cousins. A slightly higher proportion (18.0%) lived with friends, and 3.4% lived with other people including house-mates, lodgers, landlords / landladies and ex-partners.

Booklet recruited men were more likely to live alone than internet recruited men (38.7% compared to 31.8%); less likely to live with a male partner (26.1% compared to 27.0%), less likely to live with a female partner (2.3% compared to 5.0%), less likely to live with children (1.0% compared to 2.3%) and less likely to live with other members of their family (11.9% compared to 16.1%).

Men of black or Asian ethnicity were less likely to live with a male partner.

3 HIV infection and HIV testing

The rate of HIV acquisition in the population of men that have sex with men (MSM) is influenced not only by sexual risk taking behaviours (including unprotected anal intercourse and high turnover of sexual partners) but also by the frequency of HIV testing. More HIV testing results in swifter HIV diagnosis which allows better medical management of HIV infection and lower infectivity. Earlier diagnosis may also result in a lower rate of sexual HIV exposure. A growing body of evidence indicates that men with diagnosed HIV on antiretrovial therapies, and with an undetectable viral load, are significantly less likely to transmit HIV to others compared to those with a high viral load (Vernazza *et al.* 2008). As anti-retroviral therapy is dependent on receiving a positive HIV diagnosis, it is crucial that higher proportions of men are regularly tested for HIV, and for this to disproportionately be the case among men with a higher sexual risk profile.

Awareness of one's HIV status is crucial to accessing appropriate medical help and community based social support. One of the key targets of *Making it Count* (Hickson *et al.* 2003b) is to reduce the time between infection and diagnosis with HIV. The number of men reporting they have ever tested for HIV has risen across previous surveys (see Hickson *et al.* 2009: page 11). However, over 20% of men who have sex with men who are diagnosed with HIV have a CD4 count below 200/mm^3 at diagnosis, that is, are diagnosed at a late stage in their infection (HPA 2010). Earlier, more frequent testing across a high proportion of the population is required if the average length of time men spend with undiagnosed infection is to be significantly reduced. This chapter presents the responses to questions about diagnosis of HIV, recency of testing, setting for HIV testing, and preferences for future HIV testing.

3.1 INDICATORS OF HIV INFECTION

3.1.1 Self-rating of HIV transmission probability

The event the survey is focused on is the passing of HIV between sexual partners. While this cannot be directly measured using the survey method, we can ask men whether they think they will be involved in these events. All respondents were asked *How likely do you think it is that, in the next 12 months, you'll either pick up or pass on HIV?* They were asked to choose one of the options shown in the table below.

Self-rating of HIV transmission probability (n=7110, missing 351)	% **Very likely**	% **Quite likely**	% **Not sure**	% **Quite unlikely**	% **Very unlikely**
How likely do you think it is that, in the NEXT 12 months, you'll either pick up or pass on HIV?	2.0	1.5	15.4	22.9	58.2

While only a small proportion of men thought it likely *very likely* or *quite likely* they would be involved in HIV transmission in the last year, a much larger proportion were unsure whether they would or not. This suggests that while the majority of men are not fatalistic about infection, it remains a grey area for a significant minority.

3.1.2 HIV test results and perceptions of current HIV status

We are unable using the self-completion survey method to establish whether or not men have HIV infection. We can however ask them their HIV testing history and results and use this information to see where *diagnosed* HIV infection is most common.

Men were asked *Have you ever received an HIV test result?* (n=7428, missing n=33, or 0.4%). Men were offered three responses: *No, I've never received an HIV test result* (which 28.4% of all men indicated); *Yes, I've tested positive* (11.4%); *Yes, my last test was negative* (60.2%). Overall then, two thirds (71.6%) of men said they had been tested at some point and more than one-in-ten was living with diagnosed HIV infection.

We want men to be confident and accurate in their perceptions of their own HIV status. Men who have HIV can benefit from medical care which improves their prognosis only if they know they have HIV. Men were also asked *What do you think your current HIV status is (whether or not you've ever tested)?* (n=7349, missing 112 or 1.5%). They were asked to choose one from the five options in the table below, which shows the proportions indicating each option overall as well as within each HIV testing history group.

Perceptions of current HIV status (n=7349, missing 112)	**% of all**	**% by HIV testing history**		
		Last test negative (n=4435)	**Never tested** (n=2081)	**Tested positive** (n=818)
Definitely negative	51.2	59.2	53.7	2.2
Probably negative	31.9	35.5	36.3	1.2
Not sure / I don't know	5.6	4.6	9.3	1.2
Probably positive	0.6	0.5	0.6	1.1
Definitely positive	10.6	0.1	0.1	94.3

Nearly two-thirds of men (61.8%) were definite about their HIV status, either positive or negative. However, the remaining third either were unsure of their HIV status, thought it was probably negative (31.9%) or probably positive (0.6%). If we consider this variable in terms of HIV prevention need, we might say that all those who are not certain of their HIV status are in need. Therefore, over a third (38.2%) of men are in need of greater certainty about their HIV status.

Although men who had never tested were more likely to be unsure of their HIV status than men who had last tested HIV negative, the majority of MSM with undiagnosed HIV infection have tested negative at least once prior to acquiring HIV and still believe themselves to be HIV negative (Williamson *et al.* 2008). So even when men indicate they are *definitely negative* this will not actually be the case for a proportion of them.

3.1.3 Recency of last negative tests and first positive tests

Men who had tested negative for HIV were asked *When was you most recent negative result?* Men who had tested HIV positive were asked *When did you first test HIV positive?* Both groups were offered the same four category time-scales as shown in the table below.

% (n) HIV testing history (n=7428, missing 33)				
Never tested				28.4 (2109)
Last tested negative	60.2 (4474)	**Recency of last negative test**	within the last month	9.0 (669)
			within the last year but not in the last month	29.8 (2226)
			within the last five years but not in the last year	15.2 (1136)
			more than 5 years	5.1 (383)
			missing	0.8 (60)
Tested positive	11.4 (845)	**Recency of first positive test**	within the last month	0.3 (22)
			within the last year but not in the last month	1.8 (130)
			within the last five years but not in the last year	4.0 (297)
			more than 5 years	5.2 (387)
			missing	0.1 (9)
TOTAL				100.0

Among the respondents whose last HIV test was negative, nearly two-thirds said their most recent test was within the last year. A further quarter of negative tested men had received their negative test result within the last five years.

Excluding the men who had first been diagnosed with HIV over a year ago, 45.6% of men had been tested for HIV in the last 12 months. Doctors in the UK recommend that homosexually active men test for HIV at least once every 12 months (BHIVA, BASHH, and BIS 2008). Clearly there is some way to go before this target is achieved. How testing in the last year varied across the key demographic groups is described in section 3.2 below.

Men who had tested HIV positive were asked *When did you first test HIV positive?* Of the 845 men who had tested positive, nine declined to answer this question. Of the remainder, 2.6% (n=22) had been diagnosed within the last month, 15.6% (n=130) over a month ago but within the last year, 35.5% (n=297) over a year but within the last five years and the remaining 46.3% (n=387) were diagnosed over five years ago.

There were therefore 152 men who indicated they had been diagnosed with HIV in the last 12 months. Excluding the men diagnosed with HIV over a year ago, this was 2.3% of all respondents. This suggests that the rate of new HIV diagnoses (that is, the annual incidence of diagnosis) was 2.3%. If the rate of diagnosis is the same as the rate of infection, this suggests the incidence of HIV among men who complete GMSS is 2.3%, considerably higher than the estimated incidence for the entire MSM population, but congruent with GMSS recruiting men with a higher prevalence of HIV or at greater risk of HIV infection. How this proportion varies across the demographic characteristics is explored in section 3.2 below.

3.1.4 HIV testing settings

Those men who had ever received an HIV test result were asked *Where did you go for your last HIV test?* They were asked to choose from one of the options listed below.

Location of last HIV test (n=5233 , missing 86)	**Frequency**	**%**
GUM, STD or sexual health clinic	4038	77.2
GP surgery / local doctor	474	9.1
Private health care clinic	279	5.3
At an HIV or gay organisation	220	4.2
I used a complete home testing kit where I got the result immediately	26	0.5
I used a home testing kit that I sent to a lab for the result	15	0.3
Elsewhere / other	181	3.5

Over three-quarters (77.2%) of men who had ever received an HIV test did so at a GUM, STD or sexual health clinic. Only very small proportions of men (0.8%) had used a home testing kit. Those who indicated they received their HIV test at an HIV or gay organisation were asked to say where. The most common responses were *Terrence Higgins Trust* (n=74 including all THT regional offices), *Yorkshire Mesmac* (n=10), *Steve Retson Project Glasgow* (n=9), *Metro Centre* (n=8), LGF, (n=6), *Healthy Gay Life Birmingham* (n=6), and *Body Positive North West* (n=4). A further 87 agencies or settings were listed once or twice, including 9 that were outside the UK.

Those who said they had received their HIV test elsewhere / other were also asked to say where this was. The most common responses were in hospital (n=43), workplace / occupational health screening (n=14), abroad (n=11), for life insurance purposes (n=11), as a result of blood donation (n=9), and as part of a medical / drugs trial (n=7).

3.1.5 Setting preference for future HIV tests

Those men who had not tested positive for HIV were asked *If you wanted an HIV test in the future, where would you most like to get one?* They were asked to choose one from the list of options shown in the table below.

Setting preference for future HIV tests (N=6096 men never tested for HIV or whose last teat was negative, missing 487)	**Frequency**	**%**
At a GUM, STD or sexual health clinic	3907	64.1
At a GP surgery/local doctor	786	12.9
At an HIV or gay organisation	764	12.5
To use a home testing kit	361	5.9
At a private heath care clinic	250	4.1
Other	28	0.5

Nearly two-thirds (64.1%) of men indicated that they would prefer to have any future HIV test at a GUM, STD or sexual health clinic. Significant minorities also stated their preference to have a future test at a GP surgery / local doctor (12.9%) or at an HIV or gay organisation (12.5%).

Those who indicated their preference for an other setting for a future HIV test were asked to say where. The most common responses were in a community setting (n=5), and in a hospital setting (n=3). Most other respondents were unsure where they would like to have a test.

Comparing the places in which men had last tested for HIV with the places where men said they would prefer to test, more men had tested at a GUM clinic or at a private health clinic in the past than would prefer to do so again in the future. Conversely, more men said the would like to test at their GP, at an HIV or gay organisation, and using a home testing kit, than had done so in the past. This suggests that some men would choose a different testing site if they were able. However, the majority of men said their last testing site and their preferred future site were the same.

3.2 VARIATION IN HIV DIAGNOSES ACROSS DEMOGRAPHIC GROUPS

The following tables show how four measures of HIV diagnosis varies across the key demographics reported in chapter 2: the proportion of men never tested for HIV; the proportion of men not tested for HIV in the last year; the proportion living with diagnosed HIV infection; and the proportion (not already tested HIV positive) who were diagnosed with HIV for the first time within the last 12 months.

3.2.1 HIV testing history and area of residence

The following table shows how the indicators of HIV testing and infection varied across the UK.

Indicators of HIV infection	% by area of residence												
	England										Wales (380)	Scotland (275)	N Ire (102)
	London (2364)	South West (533)	South Central (328)	SE Coast (637)	East Eng (449)	East Mids (440)	West Mids (470)	York & Hum (483)	North West (663)	North East (199)			
Never HIV tested	17.2	34.7	32.6	24.6	35.2	38.9	31.6	34.0	27.0	35.2	41.3	37.8	50.0
Not tested for HIV in last year	43.8	60.8	59.2	53.2	55.9	64.3	57.7	58.3	56.9	59.3	62.5	60.5	70.2
Diagnosed positive in last year	3.0	1.0	1.6	2.3	2.1	0.7	2.8	2.0	3.7	1.1	2.6	1.1	0.0
Living with diagnosed HIV	15.2	5.8	8.2	13.8	8.5	4.3	12.3	7.5	17.9	5.5	10.0	5.1	1.0

Never having tested for HIV was most common in Northern Ireland and Wales. Not having tested for HIV in the last year was most common in Northern Ireland and the East Midlands and the South West of England. Ever having tested was most common in London and the South East Coast (including Brighton & Hove), as was testing in the last year.

- **In England, HIV testing access and promotion requires most attention in the East Midlands and the South West.**

Men were most likely to be living with diagnosed HIV in London and the North West, where men were also most likely to be diagnosed with HIV in the last year. Both of these figures suggest incidence is higher in these areas. Conversely prevalence of diagnosed infection and incidence of diagnoses were lowest in the East Midlands and in Northern Ireland.

- **The North West of England and London continue to have disproportionately high HIV incidence and should be prioritised in national HIV prevention programmes.**

3.2.2 HIV testing history and age

The following table shows how the indicators of HIV testing and infection varied across the age range.

Indicators of HIV infection	% by age group				
	under 20 (n=428)	**20s** (n=2239)	**30s** (n=2078)	**40s** (n=1663)	**50+** (n=1004)
Never HIV tested	66.6	30.6	20.4	23.1	32.2
Not tested for HIV in last year	69.5	47.2	50.6	58.4	66.4
Diagnosed positive in last year	1.2	2.0	3.0	2.8	0.8
Living with diagnosed HIV	1.6	4.8	13.9	18.1	13.9

Men under 20 were most likely to have never tested for HIV (66.6%), and most likely to have not tested in the last year (69.5%) and were least likely to be living with diagnosed HIV (1.6%). Ever having tested for HIV increased with age, as did being diagnosed with HIV. Incidence of positive HIV diagnosis within the last year was highest among those in their 30s (3.0%) and lowest among those aged 50 and over (0.8%). Men in their 40s were most likely to be living with diagnosed HIV (18.1%).

3.2.3 HIV testing history and ethnicity

The following table shows how the indicators of HIV testing and infection varied by ethnicity.

Indicators of HIV infection	% by ethnic group					
	White British (n=5837)	**White other** (n=948)	**Black** (n=119)	**Asian** (n=182)	**mixed** (n=164)	**other** (n=157)
Never HIV tested	30.3	19.7	16.0	28.6	23.2	22.9
Not tested for HIV in last year	56.7	45.0	33.7	46.6	50.7	47.3
Diagnosed positive in last year	2.2	2.4	2.0	4.5	0.7	4.1
Living with diagnosed HIV	11.1	13.5	16.0	7.1	13.4	10.2

White British men were least likely to have ever tested for HIV and least likely to have tested in the last year. Black men were most likely to have tested (that, is were least likely to have never tested or to have not tested in the last year) and most likely to be living with diagnosed HIV (16.0%). Interestingly, while Asian men were least likely to be living with diagnosed HIV, the incidence of positive HIV diagnoses within the last year was highest within this group, but this difference was not statistically significant.

It is worth noting that the group with the highest levels of ever testing for HIV (black men) also had the highest levels of diagnosed HIV infection. This suggests that while HIV testing may be a useful tool in HIV prevention programmes, it is not the case that more widespread and more frequent testing means lower infection rates.

3.2.4 HIV testing history and education

The following table shows how the indicators of HIV testing and infection varied by levels of formal education.

Indicators of HIV infection	% by education groups		
	Low (n=1535)	Medium (n=1971)	High (n=3756)
Never HIV tested	33.7	34.8	24.2
Not tested for HIV in last year	58.4	56.8	51.2
Diagnosed positive in last year	2.9	2.1	1.8
Living with diagnosed HIV	13.6	9.9	10.0

Men in the low education group were significantly more likely to be have diagnosed HIV (13.6%), and HIV incidence was highest among this group (2.9%), despite being least likely to have tested in the last year. Men with a high education level were most likely to have ever tested, most likely to have tested within the last year, but were least likely to have been diagnosed with HIV within the last year.

- **HIV testing access and promotion and HIV prevention programmes should prioritise the needs of men with lower levels of formal education.**

Out of all the subgroups considered in the survey, men with lower education is the *only* group in which recent testing is lowest *and* recent positive diagnosis is highest. This underlines again the importance of education as an organising principle in HIV inequality.

3.2.5 HIV testing history and gender of sexual partners

The following table shows how the indicators of HIV testing and infection varied by the gender of men's sexual partners in the last year.

Indicators of HIV infection	% by gender of sexual partners last year			
	No partners (n=395)	Women only (n=48)	Women and men (n=475)	Men only (n=5797)
Never HIV tested	54.7	75.0	45.3	24.8
Not tested for HIV in last year	86.4	85.4	60.9	51.3
Diagnosed positive in last year	2.3	0.0	0.4	2.4
Living with diagnosed HIV	13.8	0.0	3.9	11.9

Men who had sex only with women in the last year were least likely to have ever tested (only 25.0% had done so) and none of this small group had been diagnosed with HIV. Compared to men who had sex with men only, men who had sex with both men and women were much less likely to have ever tested.

Men who had sex with men only were the most likely to have tested for HIV, most likely to have tested within the last year, and most likely to be diagnosed with HIV in the last year.

- **Prevention programmes should continue to prioritise men who have sex with men only if they wish to prioritise those with higher HIV incidence.**

3.2.6 HIV testing history and current male relationship status

The following table shows how the indicators of HIV testing and infection varied by whether or not men had a regular sexual partner at the time they completed the survey.

Indicators of HIV infection	% by male relationship status	
	NO relationship with a man (n=3618)	Current relationship with a man (n=3773)
Never HIV tested	34.3	22.7
Not tested for HIV in last year	57.3	51.4
Diagnosed positive in last year	2.4	2.1
Living with diagnosed HIV	11.2	11.6

Single men (those with no current regular male sexual partner) were less likely to have ever tested for HIV or to have tested in the last year compared to men with a regular male sexual partner. However, there were no significant differences in the proportions currently living with diagnosed HIV or in being diagnosed with HIV in the last year.

3.2.7 HIV testing history and numbers of male sexual partners

The following table shows how the indicators of HIV testing and infection varied by the number of male sexual partners men had in the last 12 months.

Indicators of HIV infection	% by number of male partners last year					
	None (n=488)	One (n=1388)	2, 3, 4 (n=2078)	5-12 (n=1697)	13-29 (n=939)	30+ (n=786)
Never HIV tested	57.4	34.4	33.0	22.9	17.4	12.1
Not tested for HIV in last year	86.8	68.2	57.7	45.7	38.8	34.4
Diagnosed positive in last year	1.8	1.4	1.9	2.4	1.9	5.1
Living with diagnosed HIV	12.1	7.6	8.7	11.4	12.9	22.6

HIV infection is clearly associated with having higher numbers of male sexual partners. Testing for HIV, ever and in the last year, were both least common among those with no male partners and most common among those with many partners. Men with thirty or more sexual partners were most likely to have been diagnosed with HIV in the last year and most likely to be living with diagnosed HIV.

- **We recommend that programmes focus on the behaviours and needs of men with higher numbers of male sexual partners.**

3.3 SUMMARY AND IMPLICATIONS FOR PROGRAMME PLANNING

While the proportion of GMSS respondents reporting that they have ever tested for HIV is at its highest ever level, there still remains over a quarter of men who have never tested for HIV.

It is also the case that men with undiagnosed HIV infection are likely to have tested negative for HIV at some point in the past. This means that it is not only the overall level of men who have *ever* tested that is important but also how frequently those with a higher sexual risk profile re-test. Less than half of the respondents had been tested for HIV in the last year – a long way off the recommended target of 100%. Given that the prevalence of undiagnosed HIV still stands at around a third of those infected, it is crucial that recent successes in raising testing rates are harnessed and that the drive for HIV testing continues.

As has been highlighted in previous GMSS reports, living with HIV remains more common among:

- men in London and in the North West of England;
- men with lower educational qualifications;
- men with higher numbers of male sexual partners (especially those with 30 or more a year);
- black men and men of non-British white ethnicities.

Interventions should therefore aim to over-serve men who fall into one or more of these groups.

4 Sexual risk behaviours

Sexual HIV transmissions occur during specific acts in the course of sexual activity. The volume and pattern of sexual activity overall provides the pool of acts and behaviours within which transmission events occur. This chapter describes several parameters for the sexual activity of the respondents. It concerns only those 6937 men who had a male sex partner in the last 12 months, of which 7.1% also had sex with a woman (or women) in that time.

4.1 NUMBER OF MALE SEXUAL PARTNERS

The rate at which men acquire new sexual partners, as well as the overlap between partners, is central to the spread of sexually transmitted infections, including HIV. Men who indicated they had a male sex partner in the last 12 months were asked *In the last 12 months how many MEN have you had sex with in total?* and were asked to tick one of five options. The following table shows the proportion of men ticking each option.

Number of male sex partners in last 12 months	**% of men who had a male sex partner in the last 12 months** (n=6907, missing 30)
One	20.2
2, 3, or 4	30.2
between 5 and 12	24.6
between 13 and 29	13.6
30 or more	11.4

As in previous years, respondents showed a wide variety of sexual lifestyles. Half of all men who were homosexually active in the last year had four or fewer male sexual partners and one in five had one partner only in the last year. Having multiple sexual partners is common among homosexually active men, but so is having one partner.

4.2 FELLATIO AND EJACULATION IN THE MOUTH

Several STIs can be passed during fellatio and HIV transmission is possible (but very uncommon) during fellatio of an HIV positive man by an HIV negative man. Ejaculation into the mouth increases the likelihood of HIV transmission (and transmission of other infections carried in semen). *Making it Count* identifies the transfer of semen from HIV positive men into the mouths of HIV negative men as a risk behaviour to attempt to reduce.

Men were asked two sets of questions about oral sex with men, for both insertive and receptive fellatio. Regarding receptive fellatio, men were asked:

Still thinking about the last 12 months, have you sucked a man's cock?

In the last 12 months, has a man ejaculated (cum, spunked) in your mouth?

In the last 12 months, has a man ejaculated (spunked, cum) in your mouth who...

...you knew at the time was HIV POSITIVE?
...you knew at the time was HIV NEGATIVE?
...whose HIV status you DID NOT KNOW at the time?

An identical set of questions were asked about insertive fellatio. The following table shows the overall proportions of men who engaged in fellatio, the proportion who engaged in ejaculation into the mouth, and the proportions who did so with different numbers of men and with men of different HIV statuses.

Men who had a male sex partner in the last 12 months		**% by testing history**			**% of all** (n=6937, missing 51)
		Last test negative (n=4289)	**Never tested** (n=1804)	**Tested positive** (n=774)	
Any fellatio in the last 12 months	Not done	0.8	1.3	1.2	1.0
	Insertive only	2.1	2.3	1.0	2.0
	Both modalities	94.9	93.5	94.7	94.5
	Receptive only	2.2	2.9	3.1	2.5
Fellatio with ejaculation in the mouth in the last 12 months	Not done	22.9	28.9	26.2	24.9
	Insertive only	18.5	18.6	8.6	17.4
	Both modalities	48.1	40.9	40.7	45.3
	Receptive only	10.5	11.6	24.5	12.4
Ejaculation in the mouth in the last 12 months **with a known POSITIVE partner**	Not done	92.2	97.8	58.3	89.1
	Insertive only	4.6	1.3	8.2	4.2
	Both modalities	2.2	0.5	23.6	4.7
	Receptive only	0.9	0.4	9.9	2.0
Ejaculation in the mouth in the last 12 months **with a known NEGATIVE partner**	Not done	67.1	75.6	70.2	69.8
	Insertive only	10.5	7.4	4.3	8.9
	Both modalities	12.1	9.6	9.1	11.0
	Receptive only	10.4	7.5	16.5	10.3
Ejaculation in the mouth in the last 12 months **with a STATUS UNKNOWN partner**	Not done	51.6	51.7	46.5	51.0
	Insertive only	15.2	14.8	7.8	14.2
	Both modalities	25.2	24.7	24.6	25.0
	Receptive only	8.0	8.9	21.1	9.7

All associations between testing history and modality were significant at $p<.05$.

We see from the first set of rows (any fellatio in the last 12 months) that it is very common for men to engage in both receptive and insertive oral intercourse (94.5% had engaged in both modalities). Fellatio to ejaculation in the mouth is also very common, with 57.7% taking ejaculate in their mouth and 62.7% coming in someone else's mouth. However, almost a quarter of men (24.9%) had engaged in fellatio but not done so to ejaculation in the mouth (either receptive or insertive). Men with diagnosed HIV were significantly more likely to have taken ejaculate in their mouth during receptive fellatio (65.2% had done so) than were negative (58.6%) or untested men (52.5%).

Overall 10.9% of the entire sample had engaged in fellatio to ejaculation with a partner known to be HIV positive. Men living with diagnosed HIV were much more likely to have done so both receptively (33.5% had) and insertively (31.8% had) than were negative men (3.1% receptively and 6.8% insertively) or untested men (0.9% receptively and 1.8% insertively). Note that among positive men the proportion who had done so receptively is higher than the proportion that had done so insertively, while for other men it is the reverse. Men not tested positive were more likely to have ejaculated in the mouth of a positive man than had a positive man ejaculate in their mouth.

Overall, much larger proportions of men had engaged in fellatio to ejaculation in the mouth with partners known to be HIV negative, with 30.2% having done so in the last year. Doing so receptively was again most common for men with HIV (25.6%), followed by men whose last test was negative

(22.5%) and least common for men who had never tested (17.1%). However, doing so insertively was *least* common among men living with HIV (13.4%), most common for men who had tested negative (22.6%) with men who had never tested (17.0%) in between.

Compared with ejaculation in the mouth with positive men, this pattern is distinctly different and suggests some men modify ejaculation into the mouth on the basis of their understanding of their own and their partners HIV status. Identical proportions of men tested negative (22.5% and 22.6%) had ejaculated in a negative man's mouth and had a negative man ejaculate in his own mouth, and identical proportions of men never tested (17.4% and 17.0%) had ejaculated in a negative man's mouth and had a negative man ejaculate in his mouth. However, among positive men, ejaculation in a negative man's mouth was much less common (13.4%) than having a negative man ejaculate in their mouth (25.6%).

In terms of ejaculation in the mouth, this act was most common with partners of unknown status, with overall 49.0% having done so. Having a man of unknown status ejaculate in their mouth was again most common among positive men (45.7%), and was equally common among negative tested men (33.2%) and men who had never tested (33.6%). Ejaculating in the mouth of a partner of unknown status was *least* common among positive men (32.4%), followed by men who had never tested (39.5%) and most common among men tested negative (40.4%). Again, this pattern is what we would expect if some positive men were choosing to avoid ejaculation into the mouth of men who were known to be negative or whose HIV status was unknown.

These differences in modality of ejaculation into the mouth with partners of different HIV status (relative to the respondents HIV status) strongly suggest that some MSM are avoiding ejaculation into the mouth in order to reduce HIV risk and that they do so differentially on their understanding of the sero-discordancy with their partner and on the modality of fellatio.

These associations with modality of ejaculation and perceived HIV sero-concordancy are illustrated in Figure 4.2 using data from the table above. The first three columns show responses from men tested HIV negative, the second three from men never tested for HIV and the third three from men tested HIV positive. In each set of three columns, the first bar shows men engaging in ejaculation into the mouth with partners thought HIV negative, the second with men whose status was unknown and the third with men known to be HIV positive.

We can see from the figure that when men engage in fellatio to ejaculation with men thought to be the same HIV status as themselves (either both negative in the 1st bar or both positive in the 9th bar) the modality is balanced (about the same proportion have insertive only as receptive only). When it occurs between positive and negative men (the 3rd and 7th bars) the negative partner is more likely to give and the positive partner more likely to take.

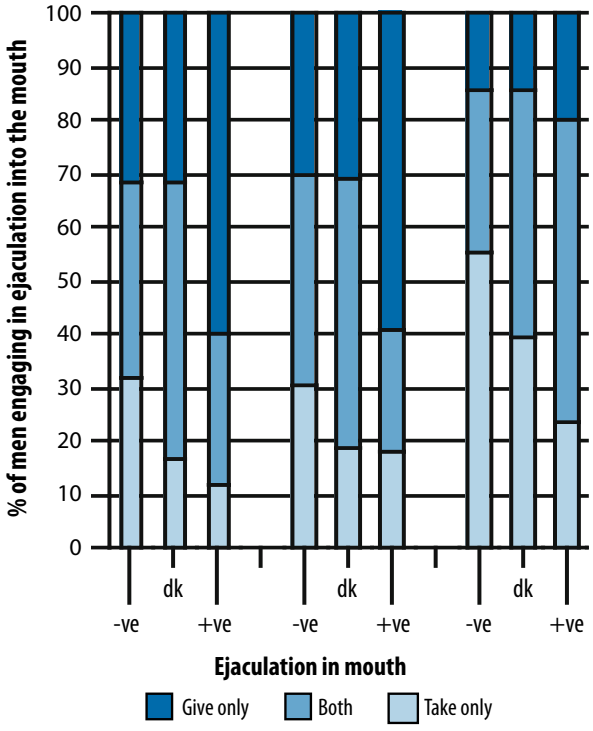

Figure 4.2: Ratios of giving and taking ejaculate in the mouth with HIV negative (-ve), status unknown (dk) and positive (+ve) sex partners by men tested HIV negative (1st three columns), men never tested (2nd three columns) and men tested HIV positive (3rd three columns).

Similarly (since most men never tested for HIV assume they are HIV negative), when negative and never tested men engage in ejaculation in the mouth with HIV positive partners, they are much less likely to be doing so receptively than when they are doing so with negative or status unknown partners. Conversely, when HIV positive men engage in ejaculation in the mouth with known negative partners, they are much less likely to do so insertively than when they do so with other men they know are positive.

- **Men attend to knowledge of HIV sero-discordancy with their partner when choosing whether or not to engage in ejaculation in the mouth, attempting to reduce HIV transmission risk by selectively avoiding involvement in positive men ejaculating in negative men's mouths.**

4.3 ANAL INTERCOURSE

Men were asked a series of questions about anal intercourse (AI) including numbers of partners, use of condoms and what was known about the HIV status of partners unprotected anal intercourse occurred with.

4.3.1 Number of anal intercourse partners

Men were asked *In the last 12 months how many men have you had ANAL INTERCOURSE with in total?* and were asked to tick one of five bands in the table below. The following table shows the proportion of men overall who had different numbers of penetrative sex partners (in the right hand column, 69 men did not provide this data), and how those proportions varied by the total number of men's male sex partners.

Men with a male sex partner in the last 12 months		**% by number of male sexual partners in last 12 months**					**% of all** (n=6868)
		One (n=1371)	**2, 3 or 4** (n=2062)	**5-12** (n=1698)	**13-29** (n=938)	**30+** (n=786)	
Number of anal intercourse partners in last 12 months	None	21.5	16.8	8.2	5.4	4.3	12.7
	One	78.5	27.3	8.2	4.3	1.8	26.7
	Two	–	31.6	13.4	4.8	3.2	13.8
	3 or 4	–	24.3	31.8	16.6	7.6	18.4
	5 or more	–	–	38.4	68.9	83.1	28.4
Total		100.0	100.0	100.0	100.0	100.0	100.0

Men were more likely to have had AI in the last year if they had more sex partners overall in the last year. Overall, 12.7% (or 1-in-8) of men who had a male sex partner in the preceding 12 months engaged in no AI. The remaining 87.3% had AI on at least one occasion. While 78.5% of men with one male partner had AI, this rose to 83.2% of those with 2, 3 or 4 partners, 91.8% of those with 5-12 partners, 94.6% of those with 13-29 partners and 95.7% of those with 30 or more partners.

It is important to note that this does not imply that the majority of MSM have AI with all their sexual partners, let alone on all occasions they have sex. However, how many AI partners men had was also related to their total numbers of sexual partners – more sex partners meant more penetrative sex partners. While 55.9% of men with 2-4 partners had 2 or more penetrative sex partners, 83.6% of men with 5-12 partners did so, 90.3% of those with 13-29 partners and 93.9% of those with 30 or more partners.

- **Men with more sex partners have more penetrative sex partners.**

4.3.2 Number of unprotected anal intercourse partners

Men were also asked *In the last 12 months how many men have you had anal intercourse WITHOUT A CONDOM with, in total?* and were again asked to tick one of five answers. The following table shows the number of *unprotected* penetrative partners men had (96 men declined to supply this data) and the relationship to the number of *penetrative* sexual partners.

Men with a male sex partner in the last 12 months		**% by number of AI partners in last 12 months**					**% of all** (n=6841)
		None (n=844)	**One** (n=1811)	**Two** (n=945)	**3 or 4** (n=1253)	**5 or more** (n=1948)	
Number of **unprotected** AI partners in last 12 months	None	100.0	39.6	49.3	41.2	29.7	46.0
	One	–	60.4	34.1	28.3	16.5	30.7
	Two	–	–	16.6	17.0	13.4	9.3
	3 or 4	–	–	–	13.5	18.4	7.8
	5 or more	–	–	–	–	21.9	6.3
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Overall, 54.0% of men had unprotected AI (henceforth UAI) on at least one occasion in the last year. Of the men who had a UAI partner, the majority (56.9%, or 30.7% of all homosexually active men) had only one UAI partner.

Whether or not men had a UAI partner was associated with their number of penetrative sexual partners, but not in a straightforward (linear) fashion. Obviously, men who did not have an AI partner could not have a UAI partner. Among men with only one AI partner, 60.4% had a UAI partner (necessarily the same man), while only 50.7% of those with two AI partners had a UAI partner. In other words, men who had intercourse with two men were more likely to always use a condom than men who had AI with only one. We interpret this as reflecting unprotected intercourse being most common between men in monogamous or at least steady relationships. The proportion of men who had a UAI partner rises again to 58.8% among those with three or four AI partners. In other words, men with 3 or 4 AI partners were *less* likely to always use a condom for AI than were men who had only two AI partners. The proportion with a UAI partner rises again to 70.3% among those with five or more AI partners. This suggests that while UAI is more common among men with one AI partner than among men with a few AI partners, UAI becomes increasingly common with increasing numbers of AI partners.

- **Men with more anal intercourse partners have more unprotected anal intercourse partners.**

4.3.3 Insertive and receptive anal intercourse

The probability of HIV transmission during UAI between infected and uninfected men varies depending on whether the infected partner is insertive of receptive. This has a number of implications for risk management and prioritisation in programmes. To explore patterns of modality in AI and UAI, the following two questions were asked: *Still thinking about the last 12 months, have you fucked a man (been active in anal intercourse)?* A little later in the survey, they were asked: *Still thinking about the last 12 months, have you been fucked by a man (been passive in anal intercourse)?*

Both questions had 'yes' or 'no' responses which combine to give four possibilities in the table below, which also shows the proportion of men with each combination overall and by HIV testing history.

Men who had a male sex partner in the last 12 months		**% by testing history**			**% of all** (n=6887)
		Last test negative (n=4289)	**Never tested** (n=1804)	**Tested positive** (n=774)	
Anal intercourse in the last 12 months	Not done	9.8	17.1	7.0	11.4
	Insertive only	18.9	18.8	11.6	18
	Both modalities	57.9	46.7	64.6	55.7
	Receptive only	13.5	17.4	16.8	14.9
Total		100.0	100.0	100.0	100.0

The majority of homosexually active men do not engage in only insertive or only receptive AI. Of the 88.6% of men who engaged in AI, a majority (62.9% of those engaging in AI) engaged in both insertive and receptive AI. The remainder were fairly evenly split with slightly more men who were insertive only than receptive only.

Any engagement in AI was associated with HIV testing history, as was the modality of engagement. Any receptive AI in the last year was most common among men who had tested HIV positive (81.4%) and less common among those whose last test was negative (71.4%) or who had never tested (64.1%). Insertive AI on the other hand was equally common among those who had tested positive (76.2%) or negative (76.6%) but less common among those who had never tested (65.5%). Together this meant that men who had tested HIV positive were most likely to have engaged in both modalities (64.6% had done so) and were least likely to have engaged in neither (7.0% had no AI).

- **Anal intercourse is most common among men with diagnosed HIV and least common among men who have never tested for HIV.**

4.3.4 Unprotected insertive and receptive anal intercourse

If men indicated they had engaged in insertive intercourse, they were asked:

Have you fucked a man (been active) WITHOUT a condom in the last 12 months?

Similarly, if they had engaged in receptive intercourse they were asked:

Have you been fucked a man (been passive) WITHOUT a condom in the last 12 months?

The following table shows the proportion engaging in one, both or neither modalities of UAI in the last 12 months overall and by each of the three testing histories. It is not surprising to find that the pattern is broadly similar as for AI, as shown in the next table.

Men who had a male sex partner in the last 12 months		**% by testing history**			**% of all** (n=6880)
		Last test negative (n=4285)	**Never tested** (n=1802)	**Tested positive** (n=773)	
Unprotected anal intercourse in the last 12 months	Neither modality	43.7	53.1	31.8	44.9
	Insertive only	14.7	12.2	8.2	13.3
	Both modalities	30.6	22.1	43.5	29.8
	Receptive only	10.9	12.7	16.6	12.0
	Total	100.0	100.0	100.0	100.0

On these measures, overall, more than half (55.1%) of homosexually active men had some UAI in the preceding 12 months. Of these, the majority (54.1%, or 29.8% of the total) had both insertive and receptive UAI. The remainder were fairly evenly split between those who had insertive UAI only (24.1% of those who had UAI, or 13.3% of the total) and those who had receptive UAI only (21.8% of those who had UAI, or 12.0% of the total).

Again men with diagnosed HIV were more likely to have had receptive UAI (60.1% had) compared with men whose last test was negative (41.3%) or who had never been tested (34.8%). However, men with HIV were also more likely to have insertive UAI (51.7% had) compared with men whose last test was negative (45.4%) or who had never tested (34.3%). Together, these differences meant that men who had tested HIV positive were most likely to have had both insertive and receptive UAI and were least likely to have had no UAI.

Of the 81.2% of positive men who had receptive AI, 74.0% had receptive UAI (60.1% of all positive men). On the other hand, of the 76.2% of positive men who had insertive AI, 67.8% had insertive UAI (51.7% of all positive men). So it appears that while positive men are more likely to have receptive UAI than insertive UAI, this may be simply because they are more likely to have receptive AI than insertive AI. On the other hand, this pattern may arise because men with HIV are more likely to avoid insertive UAI than receptive UAI in the belief that this is less risky for HIV. However, given that the risks involved in different modalities of UAI relate not only to the HIV status of the respondent but also to the HIV status of his sexual partners, we cannot impute anything about men's risk management in the absence of knowing something about the HIV status of the men they had UAI with.

4.3.5 HIV status of partners for unprotected insertive and receptive anal intercourse

In order to better describe the risks men might be taking, those who indicated they had engaged in insertive UAI were asked:

In the last 12 months, have you fucked (been active) without a condom a man who ...

...you knew at the time was HIV POSITIVE?

...you knew at the time was HIV NEGATIVE?

...whose HIV status you DID NOT KNOW at the time?

An identical set of three questions were asked of men who had receptive AI. We note here that the meanings men will attach to 'knew/know' will vary considerably, and that this is a rough measure of the contexts in which men are taking risks rather than the pattern of exposure. For example, some of the partners thought to be HIV negative will not be, and some of respondents will themselves have undiagnosed HIV.

The pattern of UAI with partners of different HIV statuses gives some indication of whether men are attempting to reduce the risk of HIV infection or not. If men are not concerned about being involved in HIV transmission, we might expect UAI to be at similar levels with partners of different HIV statuses.

Men who had a male sex partner in the last 12 months		**% by testing history**			**% of all** (n=6793)
		Last test negative (n=4237)	**Never tested** (n=1767)	**Tested positive** (n=770)	
UAI in the last 12 months **with a known HIV POSITIVE partner**	Not done	96.5	98.8	54.8	92.3
	Insertive only	1.5	0.7	6.8	1.9
	Both modalities	1.3	0.2	28.6	4.1
	Receptive only	0.7	0.2	9.9	1.6
UAI in the last 12 months **with a partner of UNKNOWN HIV STATUS**	Not done	74.9	74.3	60.1	73.1
	Insertive only	9.1	7.0	5.1	8.1
	Both modalities	10.1	10.9	19.1	11.3
	Receptive only	5.9	7.9	15.7	7.5
UAI in the last 12 months **with a known HIV NEGATIVE partner**	Not done	65.1	78.2	84.4	70.8
	Insertive only	7.9	5.9	1.6	6.6
	Both modalities	19.0	9.7	6.2	15.1
	Receptive only	8.0	6.2	7.8	7.4

All associations between testing history and modality were significant at $p<.05$.

Considering first UAI with men known to be HIV positive (the first four rows in the table), there were very large differences across HIV testing history. Only 1.1% of those who had never tested and 3.5% of men who had tested negative had UAI with a known HIV positive man (or men) in the last year, compared with 45.3% of men tested HIV positive who had UAI with other positive men. Only a small proportion of men who had not tested positive had engaged in UAI with men they knew to be HIV positive. Although only engaged in by a small proportion of men, these actions clearly present a risk for HIV and other infections and interventions are required that explicitly address the choices men face when they know their partner has HIV.

The next four rows of the table show the proportions having UAI with men whose HIV status they did not know: 25.7% of men never tested, 25.1% of men tested HIV negative and 39.9% of men

tested HIV positive had done this. Finally, the last four rows show the proportions having UAI of different modality with men thought to be HIV negative. Overall, 21.8% of men who had never tested had done this, compared with 34.9% of men who had tested negative and 15.6% of men who had tested positive.

When men had UAI, whether they had receptive UAI, insertive UAI or both was related to their own HIV status and the perceived HIV status of the men they had UAI with (see Figure 4.3.5). This suggests men are making some risk and precaution decisions based on an understanding of the relative risks of insertive and receptive intercourse.

When men tested HIV negative had UAI with men they believed also to be HIV negative (the first bar) they were equally likely to have had insertive UAI as receptive UAI. However, when they had UAI with men they knew were HIV positive (the third bar) they were much more likely to have had insertive than receptive UAI.

The reverse was the case among men with diagnosed HIV: if they had UAI with other positive men (the ninth bar) they were fairly equally likely to have insertive and receptive UAI, but if they had UAI with men they thought to be negative (the seventh bar) they were much more likely to do so receptively than insertively.

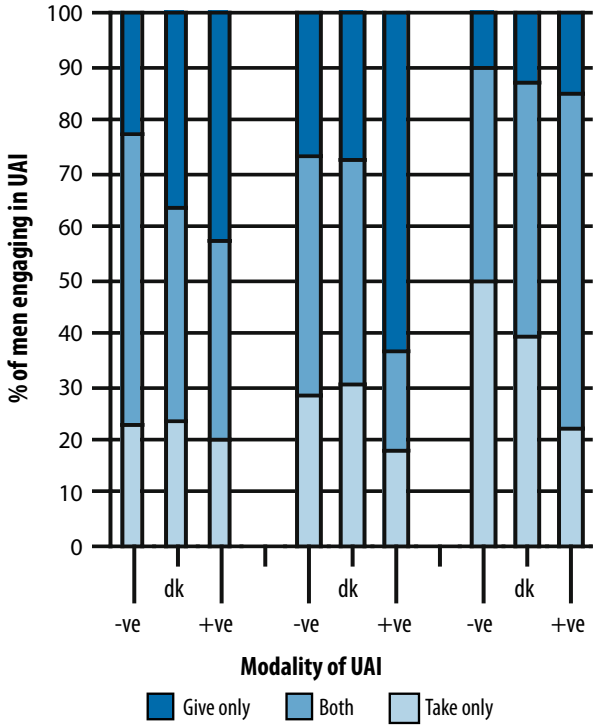

Figure 4.3.5: Ratios of insertive and receptive unprotected anal intercourse (UAI) with HIV negative (-ve), status unknown (dk) and positive (+ve) sex partners, by men tested HIV negative (1st three columns), men never tested (2nd three columns) and men tested HIV positive (3rd three columns).

Among men who had never tested for HIV, modality of UAI was fairly even when they had UAI with men they thought to be HIV negative or whose status they did not know, but if they had UAI with men known to be HIV positive they were much less likely to have receptive than insertive UAI. This may suggest that men who have never tested for HIV rely heavily on disclosure by HIV positive partners and avoidance of receptive UAI with positive partners.

While 1.2% of men who had never tested for HIV had UAI with a man they thought to be HIV positive, and 21.8% had done so with a man they thought was HIV negative, 25.7% had UAI with a man whose status they did not know. Therefore among men who had never tested for HIV, it seems likely that the majority of those picking up HIV do so during UAI with men they think do not have HIV (but who either have undiagnosed HIV or undisclosed HIV). They are then at risk of passing on their newly acquired HIV to men they think are negative or whose status they do not know. Men who have never tested for HIV who engage in UAI (12.4% of the entire sample) are making a considerable contribution to HIV incidence.

- **Some men attend to knowledge of HIV sero-discordancy with their partner when choosing whether or not to engage in unprotected intercourse, attempting to avoid the highest risk behaviour of HIV positive men being insertive in UAI with HIV negative men.**

This strategy of reducing risk by attempting to avoid 'HIV positive-insertive/HIV negative-receptive UAI' but not 'HIV negative-insertive/HIV positive-receptive' UAI has been called 'strategic positioning'. It is only possible if men are confident about their own HIV status, which is possible for men with

HIV but is called into question every time men not tested positive have UAI. This means men who have never tested (and men whose last test was negative but who have taken a risk since their last test) are at high risk of passing on HIV if they pick it up and continue to think they are positioning themselves strategically. Currently it appears that HIV testing is too infrequent for strategic positioning to be an effective risk reduction strategy for men not tested HIV positive. Among men with diagnosed HIV, being receptive in UAI with uninfected men can contribute to HIV incidence as it is possible to pass on HIV in this way.

4.4 USING CONDOMS AND CONDOM FAILURE BEHAVIOURS

Respondents who had engaged in insertive AI in the previous 12 months were asked *Have you fucked a man (been active) WITH a condom in the last 12 months?*. Overall 80.9% of men indicated they had done so. This proportion did not vary by HIV testing history.

- **Only a minority of men who engage in insertive anal intercourse *never* wear condoms.**

Those who indicated they had worn a condom were asked *All of the following contribute to condoms tearing or slipping. Which have you done in the last 12 months?* They were then offered a list of eight behaviours assumed to be associated with condom failure. The table below shows the proportion of men who wore a condom in the last year who indicated they had done each condom failure behaviour (the items have been ordered with the most common behaviour first).

Finally, men who had worn a condom were asked *In the last 12 months, have any of the condoms YOU'VE worn SPLIT or COME OFF while you were fucking a man?*. Overall, 12.9% of men who had worn a condom in the last year indicated they had experienced a condom splitting or slipping off. The table also shows how this proportion differed between users who engaged in each condom failure behaviour and those who had not.

Men who wore a condom for insertive anal intercourse in last 12 months (N=3979)	**% who engaged in condom failure behaviour**	**% who experienced condom failure**		Odds Ratio of experiencing failure (adjusted for other seven behaviours)	Population Attributable Risk (%) =(Pt-Pu)/Pt
		Not engaged in failure behaviour	**Engaged in failure behaviour**		
Using saliva as a lubricant	17.4	10.8	23.8	1.32 1.02-1.71	16.3
Fucking for over half an hour without changing the condom	14.8	10.2	29.2	2.34 1.85-2.95	20.9
Not using any lubricant	10.9	10.9	29.9	1.86 1.40-2.48	15.5
Not using lots of water-based lubricant on the outside of the condom	8.5	11.9	24.9	0.97 0.70-1.34	–
Unrolling the condom before putting it on your cock	7.3	11.7	30.6	2.09 1.54-2.83	9.3
Putting lubricant inside the condom before putting it on	6.5	12.5	21.2	1.07 0.74-1.55	–
Using a condom that's too short for your cock	6.2	11.3	39.3	2.84 2.09-3.86	12.4
Using an oil based lubricant with latex (rubber) condoms	5.1	12.0	31.7	1.71 1.19-2.46	7.0

The most commonly indicated condom failure behaviour was using saliva as a lubricant, done by 17.4% of men in the last year. Among the men who had done this (some of whom had also done other failure behaviours), 23.8% had experienced condom failure compared with 10.8% of men who had not done this (but who may have done other failure behaviours). The adjusted odds ratio (AOR) column shows how much more likely experience of condom failure is when that behaviour

was carried out. Controlling for having engaged in the other seven behaviours or not, men who used saliva as a lubricant were 1.32 times more likely to have experienced failure. The final column shows how large that behaviour's contribution is to the condom failure being experienced – the population attributable risk. [This is derived from the equation PAR%=(Pt-Pu)/Pt x 100 where Pt = prevalence of failure in total population and Pu = prevalence of failure in unexposed population]. This suggests that if we could eliminate the use of saliva as a lubricant, we would prevent 16.3% of the current condom failures being observed.

The next most common behaviour was engaging in protected intercourse for over half an hour without changing the condom. Although only 14.8% had done this (compared with 17.4% who used saliva as a lubricant), the AOR for doing this was 2.34, so that the overall contribution this behaviour made to condom failure, 20.9% of failure, was higher than for the more common behaviour of using saliva.

The third most common condom failure behaviour, not using any lubricant, also had a higher odds ratio than using saliva but did not have as large an attributable risk (15.5%).

- **The largest behavioural contributor to condom failure is prolonged intercourse without changing the condom. The second two largest contributors are using saliva as a lubricant, and not using any lubricant.**

Two of the behaviours, not using sufficient lubricant and putting lubricant inside the condom, were not significantly associated with failure when the other behaviours were controlled for.

Overall, 39.9% (of condom wearers) had done at least one of the eight behaviours. Among these men overall, 24.0% had experienced failure. Among the remaining 60.1% who had done none of these eight behaviours, only 5.8% (138/2379) had experienced condom failure in the last year.

The likelihood of experiencing condom failure increased with increasing number of failure behaviours engaged in: 18.7% (148/790) of men who had engaged in only one of the eight failure behaviours had experienced failure, compared with 23.8% (94/395) of those with two failure behaviours, 34.0% (71/209) of those with three and 36.0% (63/175) of those with four or more.

4.5 USING POPPERS DURING RISKY RECEPTIVE UNPROTECTED ANAL INTERCOURSE

Inhaling nitrites during receptive unprotected anal intercourse with HIV positive partners is thought to increase the risk of HIV transmission (Macdonald *et al.* 2007), although the mechanism by which this occurs is poorly understood. We asked four questions about use of poppers during increasingly risky sex (this behaviour is an HIV risk specifically to HIV negative men but all men were asked the questions).

In the last year, have you used poppers (nitrite inhalants)?

In the last year, have you used poppers DURING PASSIVE ANAL INTERCOURSE (when getting fucked)?

In the last year, have you used poppers during passive anal intercourse WITHOUT A CONDOM?

In the last year, have you used poppers during passive anal intercourse without a condom, with a man whose HIV STATUS YOU DID NOT KNOW OR WAS DIFFERENT TO YOUR OWN?

The following table shows the proportion of men who had done each of these behaviours, overall and separately by men's HIV testing history.

Men who had a male sex partner in last 12 months		% overall (n=7318)	% by testing history	
			Not tested HIV positive (n=6482)	Tested positive (n=839)
Any use of poppers		48.1	45.6	67.0
Use during receptive AI	Of all men	30.2	27.2	53.3
	of poppers users	*62.9*	*59.7*	*79.7*
Use during receptive UAI	Of all men	16.2	13.3	38.3
	of those using poppers during RAI	*53.9*	*49.3*	*72.1*
Use during receptive UAI with a partner of unknown or known discordant HIV status	Of all men	8.3	6.1	25.6
	of those using poppers during RUAI	*51.9*	*46.3*	*66.9*

Poppers use is extremely common among MSM with 48.1% having used them in the last year. Use of poppers is more common among HIV positive men than men not tested HIV positive (perhaps a preference for poppers partly explains why it is these men who are HIV positive). The majority (62.9%) of the men who had used them had used them during receptive anal intercourse. Again, doing so was more common among positive than not-positive men. Over half (53.9%) of the men who had used them during receptive AI had used them during receptive unprotected AI, and over half (51.9%) of those had done so with partners not known to be HIV sero-concordant. At each step positive men were more likely to do the behaviour than not-positive men.

Overall, this meant that 6.1% of men who had not tested positive had used poppers during RUAI with men not known to be HIV negative. However, of the men who had RUAI with such a partner, this figure was 31.1%. That is, among the men (not tested HIV positive) who engaged in the highest sexual risk act, almost a third had further augmented that risk by using poppers. Since poppers may increase the risk of HIV transmission by a factor of three (Macdonald *et al.*, 2007), they may be making a considerable contribution to HIV incidence.

4.6 VARIATION IN SEXUAL RISK BEHAVIOURS ACROSS DEMOGRAPHIC GROUPS

The following tables show how eight measures of sexual risk behaviours varies across the key demographics reported in chapter 2. The first two measures are of all men who had a male sex partner in the last year and indicate the proportion of men who:

- had 13 or more sexual partners in the last year;
- had 2 or more unprotected anal intercourse partners in the last year.

The third measure is the proportion of condom users who:

- experienced condom failure in the last year.

The next three indicators concern only those men who had *not* tested HIV positive (that is men who had never tested for HIV or whose last test was HIV negative) and show the proportions of these men who:

- had receptive oral intercourse to ejaculation with an HIV positive or unknown status partner;
- had receptive unprotected anal intercourse with an HIV positive or unknown status partner;
- used poppers during receptive unprotected anal intercourse with an HIV positive or unknown status partner.

The final two measures concern only men who had *not* tested HIV negative (that is, men who had never tested or who had tested HIV positive) and give the proportions of these men who:

- had insertive oral intercourse to ejaculation with an HIV negative or unknown status partner;
- had unprotected insertive anal intercourse with an HIV negative or unknown status partner.

In each row, the group with the highest level of risk behaviour is shaded, that with the lowest level has the number underlined. This means a column with many shaded cells indicates a group with consistently higher levels of risk across a range of indicators.

4.6.1 Sexual risk and area of residence

The following table shows how the indicators of sexual risk behaviours varied across the UK.

Indicators of sexual risk		% by area of residence												
		England										Wales (380)	Scotland (275)	N Ire (102)
		London (2364)	South West (533)	South Central (328)	SE Coast (637)	East Eng (449)	East Mids (440)	West Mids (470)	York & Hum (483)	North West (663)	North East (199)			
13+ partners		31.6	19.7	25.4	25.2	23.6	21.3	23.9	19.6	21.7	20.8	18.6	19.8	21.5
2+ UAI partners		23.9	24.6	24.2	26.3	21.1	19.9	24.6	21.8	22.2	26.5	22.9	23.8	18.3
Experienced condom failure (of users)		11.6	13.3	11.3	15.4	7.8	13.4	14.1	15.8	14.1	20.4	14.0	11.1	15.3
Men never tested or tested negative	ROI ejaculation with +ve / dk	32.3	37.0	34.8	33.7	34.6	28.3	37.0	35.6	34.1	36.5	38.1	37.9	33.7
	RUAI with +ve / dk	15.8	21.4	17.5	18.7	14.3	16.1	19.6	17.7	18.2	21.3	21.9	22.0	22.0
	used poppers during RUAI with +ve / dk	5.5	7.4	6.6	7.8	5.1	6.2	7.2	5.7	7.3	6.5	8.1	8.6	10.0
Men never tested or tested positive	IOI ejaculation with -ve / dk	41.4	47.8	36.3	44.2	46.2	36.0	42.5	45.6	41.7	47.8	36.9	44.9	44.7
	IUAI with -ve / dk	32.2	25.7	20.4	32.4	25.4	17.9	27.6	25.3	31.9	23.5	28.7	27.1	21.7

Only two of the eight indicators significantly varied across the areas of the country and these were highest and lowest in different areas. Having large numbers of partners in the last year was most common among men in London and in the South Central region and was lowest among men in the South West and in Yorkshire and Humber.

On the other hand, among men not tested HIV positive, the high risk behaviour of unprotected receptive anal intercourse with unknown or known HIV positive partners was most common in Scotland and Northern Ireland and was least common in London and the East of England.

No clear pattern of risk being higher in any one area of the country emerged from these data.

4.6.2 Sexual risk and age

The following table shows how sexual risk behaviours in the last year varied across the age range.

Indicators of sexual risk		% by age group				
		under 20 (n=428)	20s (n=2239)	30s (n=2078)	40s (n=1663)	50+ (n=1004)
13+ partners		14.8	19.1	29.2	28.4	27.2
2+ UAI partners		24.6	24.1	24.3	23.8	17.8
Experienced condom failure (of users)		26.2	14.5	11.3	10.3	10.3
Men never tested or tested negative	ROI ejaculation with +ve / dk	40.0	34.8	33.7	33.3	30.8
	RUAI with +ve / dk	22.6	20.3	17.3	14.9	14.6
	used poppers during RUAI with +ve / dk	5.3	6.5	6.8	5.6	4.9
Men never tested or tested positive	IOI ejaculation with -ve / dk	41.0	42.1	45.9	45.5	38.3
	IUAI with -ve / dk	21.1	22.5	27.7	25.9	18.6

Seven of the eight indicators varied by age, with four of these (multiple UAI partners, condom failure and, among men not tested HIV positive, ROI to ejaculation and RUAI with positive and unknown partners) being highest among the under 20 year olds.

Large numbers of sex partners and (among men positive or never tested) insertive OI with ejaculation into the mouth and insertive unprotected anal intercourse with an HIV negative or unknown status partner were most common among men in their 30s.

However, although large numbers of partners was least common among men under 20, they were most likely to have multiple UAI partners as well (among men not tested positive) as risky oral to ejaculation and risky unprotected anal intercourse. These findings are consistent with a picture whereby MSM on average pass HIV to men younger than themselves.

In all cases where a risk behaviour was associated with age, the oldest group of men were least likely to engage in it.

- **All HIV prevention programmes and interventions should prioritise younger men, specifically those under 40 years of age.**

4.6.3 Sexual risk and ethnicity

The following table shows the associations between sexual risk behaviours and the respondents' ethnicity.

Indicators of sexual risk		% by ethnic group					
		White British (n=5837)	White other (n=948)	Black (n=119)	Asian (n=182)	mixed (n=164)	other (n=157)
13+ partners		23.5	32.5	30.9	26.1	24.8	28.4
2+ UAI partners		23.0	25.5	26.4	22.4	20.8	23.8
Experienced condom failure (of users)		13.0	12.3	16.0	9.6	12.5	11.2
Men never tested or tested negative	ROI ejaculation with +ve / dk	35.6	31.7	19.6	21.2	21.5	26.2
	RUAI with +ve / dk	18.1	17.8	14.3	13.9	13.0	15.4
	used poppers during RUAI with +ve / dk	6.8	6.4	4.4	5.4	4.5	4.0
Men never tested or tested positive	IOI ejaculation with -ve / dk	42.5	43.4	20.0	39.2	44.2	37.0
	IUAI with -ve / dk	27.5	31.9	36.7	23.1	30.0	24.4

While large numbers of partners overall was most common among men of white other ethnicity (and least common among men with dual ethnicity), having multiple UAI partners was not associated with any specific ethnic group.

MSM of all ethnic groups are at risk of involvement in HIV transmission and should be attended to in programme planning.

4.6.4 Sexual risk and education

The following table shows sexual risk behaviours across the education groups.

Indicators of sexual risk		% by education groups		
		Low (n=1535)	Medium (n=1971)	High (n=3756)
13+ partners		22.5	23.9	26.7
2+ UAI partners		27.5	24.0	21.3
Experienced condom failure (of users)		12.4	16.0	11.3
Men never tested or tested negative	ROI ejaculation with +ve / dk	37.1	36.1	31.9
	RUAI with +ve / dk	21.4	18.3	16.1
	used poppers during RUAI with +ve / dk	9.1	6.3	5.6
Men never tested or tested positive	IOI ejaculation with -ve / dk	45.2	43.9	39.4
	IUAI with -ve / dk	31.9	25.7	27.1

All of the indicators of sexual risk behaviours significantly varied by education level, the majority (six of the eight) being highest among men with lowest education. The exceptions were high numbers of sex partners overall (which was highest among men with higher education), and condom failure (highest among the middle education group).

Overall, these data suggest that HIV prevention interventions addressing oral and anal risk behaviours should:

- **Prioritise men with lower levels of formal education by targeting them so the they are disproportionately encountered by men with lower education, and by tailoring them so they are acceptable to and effective for this group when accessed.**

4.6.5 Sexual risk and gender of sexual partners

The following table shows the associations between sexual risk behaviours and the gender of men's sexual partners in the last year.

Indicators of sexual risk		% by gender of sexual partners last year	
		Women and men (n=475)	Men only (n=5797)
13+ partners		24.2	25.1
2+ UAI partners		23.2	23.3
Experienced condom failure (of users)		20.3	12.3
Men never tested or tested negative	ROI ejaculation with +ve/dk	34.8	34.0
	RUAI with +ve/dk	18.3	17.7
	used poppers during RUAI with +ve/dk	7.3	6.4
Men never tested or tested positive	IOI ejaculation with -ve/dk	52.1	41.2
	IUAI with -ve/dk	24.9	28.3

Experience of condom failure was considerably higher among behaviourally bisexual men than among exclusively homosexually active men, and ejaculation into the mouth of risky partners by positive and untested men was more common among the same group. No other indicators varied by having female as well as male partners.

- **Behaviourally bisexual men might benefit from targeted interventions addressing the factors reducing condom failure.**

4.6.6 Sexual risk and current male relationship status

The following table shows the associations between sexual risk behaviours and whether or not men had a regular sexual partner at the time they completed the survey.

Indicators of sexual risk		% by male relationship status	
		NO relationship with a man (n=3618)	Current relationship with a man (n=3773)
13+ partners		26.5	23.7
2+ UAI partners		23.5	23.1
Experienced condom failure (of users)		12.6	13.0
Men never tested or tested negative	ROI ejaculation with +ve / dk	35.4	32.8
	RUAI with +ve / dk	18.7	17.0
	used poppers during RUAI with +ve / dk	6.0	7.0
Men never tested or tested positive	IOI ejaculation with -ve / dk	41.3	43.0
	IUAI with -ve / dk	22.3	20.0

Large numbers of sexual partners was slightly less common among men with a current regular partner but having multiple UAI partners in the last year was not associated with current relationship status. Among men not tested HIV positive taking into the mouth the ejaculate of a man of unknown or positive status was more common among single men, but other risk behaviours were not associated with relationship status.

These data suggest that men are at risk of HIV transmission when both within and outside of relationships and that programmes should address the variety of contexts in which sex and risk occur.

4.7 SUMMARY AND IMPLICATIONS FOR PROGRAMME PLANNING

A wide range of sexual risk behaviours were asked about in this survey and they show varying degrees of commonness among respondents.

Ejaculating into a partner's mouth (62.7%), taking ejaculate in the mouth (57.7%), unprotected insertive anal intercourse (43.1%) and unprotected receptive anal intercourse (41.8%) were all common behaviours in the last year.

For all four of these behaviours it is clear that some men choose to engage in them only when they are having sex with men they think have the same status themselves, or they choose to avoid them when they know they and their partner have a different status. For example, although 41.5% of men whose last test was HIV negative had receptive UAI in the last year, far fewer (16.0%) had done so with a partner of unknown status and only 2.0% had done so with a man they knew to have HIV. Similarly, while 51.7% of men diagnosed with HIV had insertive UAI in the last year, fewer (34.8%) had done so with men whose status they did not know and fewer again (14.0%) had done so with a partner they knew to be HIV negative.

However, engagement in these risk behaviours with partners of unknown status is still very common, and engagement in them with a known HIV discordant partner is still relatively common. Behaviours most likely to result in acquiring HIV are most common among the under 20s, while those most likely to pass on HIV are most common among men in their 30s. These patterns partly explain why HIV is passed down the age range.

In terms of other inequalities in sexual risk behaviours, men with lower levels of education remain most likely to engage in most kinds of risk behaviours and should remain a priority for interventions.

5 Indicators of HIV prevention need

This chapter reports on questions designed to assess the extent to which HIV prevention needs are met or not. We count as prevention needs those aspects of knowledge, motivation and ability required to have control over the behaviours that cause HIV infection. Prevention needs are therefore diverse and wide-ranging and each survey can only capture data about a relatively small subset of them.

5.1 INDICATORS OF HIV PREVENTION NEED

GMSS 2008 asked only a few questions that provide an indication of HIV prevention need. These include men's prospective reaction to a positive HIV status disclosure by a potential sexual partner, and their knowledge of how poppers might increase the likelihood of HIV transmission. We also asked four knowledge items about harms associated with anabolic steroid use, an aspect of gym culture which many gay men may encounter. These indicators are intended to complement and enhance the battery of needs indicators asked in previous GMSS surveys.

5.1.1 Prospective reaction to positive HIV status disclosure from a sexual partner

Men who had not tested positive for HIV were asked *If a man you were going to have sex with told you he was HIV positive, would you ...?* They were asked to choose their response from one of the four options shown the in the table below.

Reaction to positive HIV disclosure (n=6241, missing 342)	**% Not want to have sex with him**	**% Still want sex but be extra careful**	**% Have the kind of sex you would have had anyway**	**% Other**
If a man you were going to have sex with told you he was HIV positive, would you ...?	51.9	40.6	4.7	2.7

Over half of respondents indicated that they would not wish sex to occur if a potential sexual partner disclosed their positive HIV status. A further 40.6% said they would still have sex but would want it to be extra careful.

Those who indicated an *other* response (n=185) were asked to describe what that might be. Their responses included: not knowing what their reaction would be; such a scenario would not occur because they are in monogamous relationships; their reaction would be contingent on the context in which sex was occurring and the personal characteristics of their potential sexual partner (including whether sex was casual in nature or seen as a prelude to a more serious relationship); dependent the man's viral load. A large number of men reported that they would modify their planned behaviour in response to a positive HIV status disclosure, perhaps only having oral sex, massage or mutual masturbation instead of anal intercourse. Others stated that they would want to find out more about HIV before proceeding any further, either from the HIV positive person himself or from a health professional.

This question is not in itself an indicator of HIV prevention need but the findings highlight the fact that a large number of negative or untested men may be uncertain about how to deal with a sero-discordant sexual encounter and might also be unsure of the basic biology of how HIV is transmitted. The finding that over half of negative or untested men would not want to have sex

once told that their potential sexual partner has diagnosed HIV does little to allay the concerns already held by many men with diagnosed HIV who fear (or have indeed experienced) HIV related stigma, discrimination and rejection. The responses to this question will not be reported according to demographic groups.

5.1.2 Poppers knowledge

In addition to questions about their usage of poppers (discussed in section 4.5), all men were told *The following statement is TRUE. Did you know this already?* They were provided with four options (shown in the table below).

Knowledge of poppers (n=7299, missing 162)	**% Knew this**	**% Not known**	**% Not sure**	**% Do not understand**	**% in need**
If an HIV negative man is getting fucked without a condom by a man with HIV, sniffing poppers at the same time makes it more likely he will pick up HIV.	42.3	40.9	11.9	4.9	57.7

More than half of men (57.7%) did not know, were not sure, or did not understand the statement. This suggests substantial unmet need for knowledge about the increased transmission risk with poppers use during unprotected anal intercourse.

5.1.3 Anabolic steroids knowledge

All men were told *All of the following statements are TRUE. Did you know this already?* They were given four items of knowledge about anabolic steroids and asked to indicate one of four options (shown in the table below).

Knowledge of poppers (n=7299, missing 162)	**% Knew this**	**% Not known**	**% Not sure**	**% Do not understand**	**% in need**
When injecting anabolic steroids it is possible to pick up HIV, hepatitis B and hepatitis C from injecting equipment previously used by someone else (n=7138, missing 323)	80.4	12.9	3.7	3.0	19.6
The use of anabolic steroids has been linked to heart disease (n=7105, missing 356)	54.7	31.7	11.1	2.6	45.4
Taking stimulants (like cocaine) while on anabolic steroids cycle increases your risk of a heart attack (n=7116, missing 345)	53.8	33.2	10.5	2.5	46.2
The production of most (non-prescribed) anabolic steroids is not controlled and they can be much stronger or weaker than stated on the label (n=7109, missing 352)	48.9	35.9	12.0	3.3	51.2

Over three-quarters of men (80.4%) were aware that it is possible to pick up HIV, hepatitis B and hepatitis C from injecting anabolic steroids if the equipment had previously been used by someone else. However, less than half (48.9%) knew that anabolic steroids can be much stronger or weaker than stated on the label.

5.2 VARIATION IN NEEDS ACROSS DEMOGRAPHIC GROUPS

In this section we examine how the data reported above varies across the population groups described in previous chapters. We are particularly interested in population groups who have many aims poorly met (that is, high levels of need) compared with others.

5.2.0 Unmet needs and HIV testing history

The following table shows how unmet HIV prevention needs varied across the HIV testing history groups.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	**% by HIV testing history**		
	Never tested (n=2109)	**Tested negative** (n=4474)	**Tested positive** (n=845)
• Poppers increase HIV risk during risky sex	68.7	54.5	48.2
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroid injecting equipment	25.0	18.0	14.3
• Steroids use has been linked to heart disease	48.5	45.0	39.6
• Stimulant use on steroids increases heart attack risk	47.1	45.9	45.6
• Steroids can be much stronger or weaker than stated on the label	52.8	50.7	49.1

As in previous surveys, men who had never tested for HIV were most likely to be in need of prevention knowledge and men who had tested HIV positive were most knowledgeable. This year, three of the five knowledge items showed this pattern.

5.2.1 Unmet needs and area of residence

The table below shows how the indicators of prevention need differed among groups of men living in different areas of the country.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	**% by area of residence**												
	England										**Wales** (380)	**Scotland** (276)	**N Ire** (102)
	London (2372)	South West (534)	South Central (328)	SE Coast (637)	East Eng (451)	East Mids (442)	West Mids (471)	York & Hum (487)	North West (667)	North East (202)			
• Poppers increase HIV risk during risky sex	54.7	60.9	65.8	56.9	63.1	58.0	54.0	60.2	54.6	65.2	61.7	56.6	59.0
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroid injecting equipment	17.5	22.3	17.1	22.1	19.5	22.1	20.7	22.5	18.9	18.8	20.6	16.0	19.1
• Steroids use has been linked to heart disease	44.4	46.9	46.3	45.3	40.8	45.8	51.4	47.3	45.7	45.4	45.5	40.4	45.7
• Stimulant use on steroids increases heart attack risk	47.1	48.6	47.4	47.0	42.6	45.6	48.9	45.9	45.6	46.2	49.5	33.6	36.8
• Steroids can be much stronger or weaker than stated on the label	52.2	52.3	55.9	51.8	50.7	51.1	50.9	50.7	48.0	50.3	50.4	44.1	48.9

Men in South Central and the North East of England were least likely to be aware of the association between poppers use and the possibility of HIV transmission. Those living in South West England and the West Midlands were less likely than men in other regions to know that taking stimulants while on anabolic steroids can increase the chances of a heart attack.

5.2.2 Unmet needs and age

The following table shows how unmet HIV prevention needs varied across the age groups.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	**% by age group**				
	under 20 (n=433)	**20s** (n=2249)	**30s** n=2082)	**40s** (n=1670)	50+ (n=1010)
• Poppers increase HIV risk during risky sex	67.9	61.6	54.6	54.8	56.6
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroids injecting equipment	24.5	19.9	17.3	19.1	22.4
• Steroids use has been linked to heart disease	62.6	50.6	43.3	38.6	41.6
• Stimulant use on steroids increases heart attack risk	52.8	44.4	45.2	47.0	47.8
• Steroids can be much stronger or weaker than stated on the label	55.2	50.2	50.4	50.7	53.3

Five of these six knowledge indicators showed the greatest unmet need among the youngest group of men, those under twenty.

- **HIV prevention programmes should aim to increase their contribution to meeting the sexual health needs of those in their 20s and 30s.**

5.2.3 Unmet needs and ethnicity

The following table shows how unmet HIV prevention needs varied across the ethnic groups.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	**% by ethnic group**					
	White British (n=5858)	**White other** (n=951)	**Black** (n=120)	**Asian** (n=184)	**mixed** (n=165)	**other** (n=158)
• Poppers increase HIV risk during risky sex	58.3	56.0	57.4	54.4	51.2	56.4
• Can pick up HIV, hepatitis B and C from sharing steroid injecting equipment	19.1	17.6	26.9	30.9	22.9	26.2
• Steroids use has been linked to heart disease	45.3	42.4	49.5	55.6	48.1	47.3
• Stimulant use on steroids increases heart attack risk	45.9	44.8	52.3	53.9	45.2	52.3
• Steroids can be much stronger or weaker than stated on the label	51.0	47.9	51.9	63.3	51.6	57.7

Both items which showed differences across ethnic groups showed highest need among Asian men, suggesting that education interventions should pay particular attention to ensuring the needs of this group are met.

5.2.4 Unmet needs and education

The following table shows how unmet HIV prevention needs varied across the educational attainment level of respondents.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	% by education groups		
	Low (n=1673)	Medium (n=1968)	High (n=3763)
• Poppers increase HIV risk during risky sex	62.6	61.1	56.0
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroid injecting equipment	28.9	19.3	16.1
• Steroids use has been linked to heart disease	55.2	49.1	39.3
• Stimulant use on steroids increases heart attack risk	51.5	45.9	43.2
• Steroids can be much stronger or weaker than stated on the label	58.6	54.1	47.0

Across all five of the knowledge indicators men with the lowest levels of education were most in need when compared to men in the other groups.

- **All HIV prevention programmes should aim to over-serve men with lower levels of formal education.**

5.2.5 Unmet needs and gender of sexual partners

The following table shows how unmet HIV prevention needs varied across the gender of sexual partners in the last year groups.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	% by gender of sexual partners last year			
	No partners (n=541)	Women only (n=49)	Women and men (n=493)	Men only (n=6433)
• Poppers increase HIV risk during risky sex	60.7	84.4	66.9	56.7
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroid injecting equipment	16.8	26.1	23.2	19.4
• Steroids use has been linked to heart disease	44.7	38.6	42.2	45.7
• Stimulant use on steroids increases heart attack risk	46.7	34.1	43.8	46.4
• Steroids can be much stronger or weaker than stated on the label	52.8	56.8	48.5	51.1

While the majority of all groups were in need of information about poppers and risk, men who had sex with women only were least likely to know this item.

5.2.6 Unmet needs and current male relationship status

The following table shows how unmet HIV prevention needs varied by having a current relationship with a man.

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	% by male relationship status	
	NO relationship with a man (n=3780)	Current relationship with a man (n=3640)
• Poppers increase HIV risk during risky sex	60.3	55.3
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroid injecting equipment	18.8	20.3
• Steroids use has been linked to heart disease	46.9	43.8
• Stimulant use on steroids increases heart attack risk	48.6	43.9
• Steroids can be much stronger or weaker than stated on the label	53.6	48.8

The majority of the indicators of need showed a difference across relationship status, with men in a current relationship with a man having less unmet need than single men.

5.2.7 Unmet needs and numbers of male sexual partners

The following table shows how unmet HIV prevention needs varied by the number of male partners men had in the last year. The table only includes men that had a male partner in the last year (those that did not have a male partner in the last year are shown in section 5.2.5 above).

Indicators of knowledge [% who did not know, were unsure, or did not understand the statement]	**% by number of male partners last year**				
	One (n=1393)	**2, 3, 4** (n=2087)	**5-12** (n=1701)	**13-29** (n=939)	**30+** (n=788)
• Poppers increase HIV risk during risky sex	57.5	61.2	58.6	54.7	47.7
• Can pick up HIV, hepatitis B and hepatitis C from sharing steroid injecting equipment	20.0	20.4	18.2	20.9	18.9
• Steroids use has been linked to heart disease	45.1	45.7	45.5	45.5	45.5
• Stimulant use on steroids increases heart attack risk	43.4	46.7	46.1	48.1	47.6
• Steroids can be much stronger or weaker than stated on the label	47.4	52.3	52.2	51.1	50.7

Men with more than one but only a few partners were least likely to be aware of additional sexual risk with poppers use. However, anabolic steroids knowledge did not vary by numbers of male sexual partners in the last year.

5.3 SUMMARY AND IMPLICATIONS FOR PROGRAMME PLANNING

Unlike some other years, the *Gay Men's Sex Survey* in 2008 included very few HIV prevention needs indicators (those questions that measure men's motivation and ability to choose precautionary behaviours).

Poppers may be making a significant contribution to HIV incidence among men who have sex with men in the UK. As well as being commonly used (see Section 4.5) they may increase the risk of HIV transmission during risky sex by a factor of three. More than half of the respondents did not know that poppers increase risk and may therefore be taking additional risks in ignorance. Continuing education on this topic is needed.

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