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Multiple chances

***Findings from the
United Kingdom
Gay Men's Sex
Survey 2006***

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Ford Hickson
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Kathie Jessup
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Original Research Report

Acknowledgments

Survey design and recruitment collaborators: Our thanks are due to the 107 agencies who collaborated on *Vital Statistics*, the *Gay Men's Sex Survey* in 2006. They include agencies who suggested content for the survey, requested booklets for local distribution directly from Sigma, or got their booklets from a third party and those that promoted the survey via their websites or distributed posters on the gay scene. Website addresses are given for agencies who promoted the survey online (some of which also distributed booklets).

- A2Z Sexual Health
- Action for Men <www.action4men.org>
- Adur, Arun & Worthing PCT
- The Albert Kennedy Trust
- Armistead Project
- Bolton Gay and Bisexual Group, Bolton PCT <www.bolton.nhs.uk>
- Brent PCT (Health Promotion Department)
- The Brunswick Centre <www.thebrunswickcentre.org.uk>
- Buckinghamshire Hospital NHS Trust, GUM Department (High Wycombe)
- Buckinghamshire Lesbian & Gay LINK (Qspace)
- CARESS / GRAB (Dagenham)
- Central Cornwall PCT
- CLASH (Central London Action on Street Health, part of Camden PCT)
- Cornwall & I.O.S. Health Community <www.gaycornwall.org.uk>
- Cricket's Lane Health Centre, Ashton-Under-Lyne (Tameside & Glossop PCT)
- Derbyshire Friend
- DHIVerse Cambridge <www.dhiverse.org.uk>
- Doncaster & South Humber NHS Trust
- Dorset Gay Men's Health (West Dorset General Hospitals NHS Trust)
- Durham & Chester-Le-Street PCT, Specialist Health Promotion Service
- East Kent Health Promotion (East Kent Coastal PCT)
- The Eddie Surman Trust
- Eddystone Trust <www.eddystone.org.uk>
- ELOP (East London Out Project)
- Epsom & St Helier University NHS Trust, Department of GU Medicine
- Fylde PCT
- GAI Project @ the Health Shop (Nottingham Community Health NHS Trust)
- The Garden Clinic, Upton Hospital (Slough PCT)
- Gay Advice Darlington (GAD) <www.gayadvisedarlington.co.uk>
- www.gay.com/uk
- www.gaydar.co.uk
- www.gmh.org.uk
- Gay Men's Health Promotion / HIV Prevention Project (Basingstoke)
- Gay Men's Health Promotion Service INSCAPE (Portsmouth City PCT)
- Gay Oxford
- Gay Surrey <www.gaysurrey.org>
- Gay West (Bath)
- George House Trust <www.gh.org.uk>
- GMFA <www.gmfa.org.uk>
- GYRO – gay youth 'r' out (Liverpool, Young Person's Advisory Service)

- Health Promotion Service (Maidstone)
- Healthy Gay Life <www.hgl.nhs.uk>
- www.healthygayscotland.com
- Herefordshire PCT Sexual Health Services
- The Hungerford Drug Project (part of Turning Point)
- Leeds Gay Community Group
- Lesbian, Gay & Bisexual Health Project (Exeter PCT) <www.exeter-pct.nhs.uk>
- The Lesbian and Gay Foundation (LGF) <www.lgf.org.uk>
- www.lgbtyouth.org.uk
- Lincolnshire Lesbian & Gay Switchboard
- Lloyd Clinic, Guy's & St. Thomas' Hospital NHS Trust
- London Friend
- London Lesbian & Gay Switchboard <www.llgs.org.uk>
- Medway & Swale Sexual Health Programme
- Men4Men Shop (Luton tPCT) <www.gay-bedfordshire.co.uk>
- Mesmac North-East (Middlesbrough)
- Mesmac North-East (Newcastle-upon-tyne) <www.mesmacnortheast.com>
- Metro Centre Ltd.
- National Public Health Service for Wales, Newport
- National Public Health Service for Wales, Powys
- Naz Project London <www.naz.org.uk>
- Northamptonshire Lesbian, Gay and Bisexual Alliance (NLGBA)
- Nottingham and Nottinghamshire Lesbian & Gay Switchboard
- Outrite (part of Body Positive Cheshire & North Wales)
- PACE
- Pennine Acute Hospitals NHS Trust
- Piccadilly Centre Sexual Health Team (Stoke-on-Trent)
- Positive East <www.positiveeast.org.uk>
- Project Oscar (Chorley & South Ribble PCT)
- www.queeryouth.org.uk
- Renton Clinic (Dartford & Gravesham NHS Trust)
- Sheerwater Community Centre
- Sheffield Centre For HIV & Sexual Health <www.sexualhealthsheffield.nhs.uk>
- Solihull PCT
- South Staffordshire MESMEN Project <www.mesmen.co.uk>
- Staffordshire Buddies <www.staffordshirebuddies.co.uk>
- StaG Project (Gateshead PCT)
- Stockport Centre for Health Promotion (Stockport PCT services)
- Suffolk MESMAC
- Summit House Support
- SW5 (formerly Steetwise Youth, now part of Terrence Higgins Trust) <www.sw5.info>
- Teesside Positive Action (Middlesbrough)
- TEN (Norfolk NHS HIV/AIDS & Sexual Health Unit, Great Yarmouth PCT)
- Terrence Higgins Trust Counselling Services
- Terrence Higgins Trust Cymru (Cardiff)
- Terrence Higgins Trust Cymru (Swansea)
- Terrence Higgins Trust East (Colchester)
- Terrence Higgins Trust East (Southend)
- Terrence Higgins Trust LADS (London)
- Terrence Higgins Trust Lighthouse South 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 West (Bristol)
- Terrence Higgins Trust West (Swindon)
- Terrence Higgins Trust Wirral (formerly Jigsaw Centre, Birkenhead)
- Terrence Higgins Terrence Yorkshire
- TRADE – Gay Community Health Project <www.gaymenstrade.com>
- UK Coalition of People Living with HIV and AIDS (now closed)
- West London Gay Men's Project <www.westlondongmp.org.uk>
- Wiltshire & Swindon Men's Sexual Health
- Yorkshire Mesmac <www.mesmac.co.uk>

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www.sigmaresearch.org.uk/go.php/reports/report2008c

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1 Introduction and methods

1.1 CONTENT OF THE REPORT

This research report outlines the main findings of Vital Statistics 2006 – which was the tenth annual *Gay Men's Sex Survey* (GMSS). The survey was carried out from July to October 2006 by Sigma Research in partnership with 107 organisations across the United Kingdom (see *Acknowledgements* for a list of collaborators).

The information in this report is about HIV infection, sex between men and HIV prevention needs. 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 reports from GMSS in 1997 to 2005 (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).

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 12,155 men in terms of their: area of residence; age; ethnicity; education; income; sexuality and gender of sexual partners; household living arrangements; and relationship status including experience of civil partnerships and marriage.

Chapter 3 describes experiences of HIV and hepatitis C testing and diagnosis and examines variation in these behaviours for the population groups outlined in Chapter 2.

Chapter 4 is concerned with sexual behaviours and HIV risk, specifically numbers of male sexual partners in the last year, engagement in a range of sexual activities and poppers (nitrate inhalants) use during sex. All 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 included one attitudinal item, nine indicators of need and one item that was designed to establish what proportion of the sample would like to be involved in meeting the HIV prevention needs of other gay and bisexual men. These indicators are presented for the population groups outlined in preceding chapters.

1.2 BACKGROUND AND DEVELOPMENT OF THE TENTH 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 ten times, with funding from Terrence Higgins Trust as part of CHAPS. 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).

The 2006 questionnaire was designed in collaboration with the health promoters that participate in recruitment. In May 2006 we wrote to all agencies who had recruited men to the survey in 2005 and invited them to suggest questions or topics for inclusion. We had requests for topics from four agencies. In mid-June a long draft of the questionnaire was sent out to key collaborators, who were

asked to check the questions for appropriateness for their client group and to prioritise them. Ten individuals or agencies gave feedback on the draft prior to it being pre-tested.

Piloting of the questionnaire occurred in three gay bars in South London. Fifteen 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 eight years since, 20-30,000 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 2006 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, 22,550 booklets were sent out to 87 agencies many of which had distributed booklets in previous years. Recruitment was open for a twelve week period from 24th July to 16th October 2006. Booklets were returned to Sigma Research marked as distributed by 101 agencies, including 19 regional offices or service centres of Terrence Higgins Trust. The average (median) number of booklets returned by each collaborator was 18 (range 1 to 956). We received twenty or more booklets from 33 different agencies. In April 2007, these 33 agencies received a targeted data report on the men they had recruited. Overall, 4,262 booklets were returned via Freepost, giving a return rate of 18.9% of those booklets distributed to 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 2006 the survey was available for completion online via a specific website in English only. The questionnaire contained the same 42 questions as the booklet with another 29 added. The additional questions concerned whether respondents had seen a number of HIV prevention and 'safer sex' interventions, including adverts, leaflets and free condom packs. These additional questions have been reported elsewhere (Hickson 2007).

The 2006 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 twelve weeks (24th July to 16th October 2006). It was substantially promoted by two gay commercial web sites – www.gay.com/uk and www.gaydar.co.uk – and 30 gay community and health promotion web sites (see acknowledgements). In April 2007, 10 agencies received a targeted data report on the men they had recruited online. Overall, we received 11,865 online responses.

1.4 EXCLUSIONS

The overall proportion of booklet returns excluded from the data analysis was 9.2% (393 returns). In the eight 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 doing distribution of the booklet varies from year to year.

The proportion of web-recruited men excluded was 30.2% (3579 returns). In the six years we have undertaken the survey online this proportion has varied between 15.1% (in 2003) and 30.9% (in 2001). The relatively high exclusion rate in 2006 was largely a function of the web sites that undertook paid recruitment. In 2006 www.gay.com/uk recruited twice as many respondents to the survey as www.gaydar.co.uk, which is the opposite of preceding years. Recruitment via www.gay.com/uk always results in a high proportion of recruits resident outside the UK.

In total there were 3972 questionnaires returned but not included in the analysis. This represents almost a quarter (24.6%) of the sample. The table below shows the reasons for exclusions.

All questionnaires returned (n=16127)	Booklet	Web	TOTAL
Total returns	4262	11865	16127
No evidence on where they lived	6 (0.1%)	0	6 (<0.1%)
Lived in Republic of Ireland	7 (0.2%)	656 (5.5%)	663 (4.1%)
Lived outside UK or Republic of Ireland	114 (2.7%)	2138 (18.0%)	2252 (14.0%)
No evidence of sex with men in the previous year and no gay, bisexual or other similar sexual identity	92 (2.2%)	205 (1.7%)	297 (1.8%)
Already completed the survey	49 (1.1%)	290 (2.4%)	339 (2.1%)
Respondent aged under 14	0	10 (<0.1%)	10 (<0.1%)
Completed by a female (and no evidence of transgender)	70 (1.6%)	235 (2.0%)	305 (1.9%)
Completed by a intersex person	21 (0.5%)	38 (0.3%)	59 (0.4%)
Not completed sufficient questions	28 (0.7%)	3 (<0.1%)	31 (0.2%)
Spoiled or incomprehensible	6 (0.1%)	4 (<0.1%)	10 (<0.1%)
Sample size: Men with homosexual experience in the last year or a gay, bisexual or similar identity	3869 (90.8%)	8286 (69.8%)	12155 (75.4%)

The majority of men were excluded from the analysis because they were not UK-resident. Using a question on country of residence and a question on local authority of residence, 23.4% of the online sample were excluded for non-UK residence (compared to 16.2% in 2005, 12.8% in 2004 and 13.2% in 2003) and 2.9% of booklet-recruited men (compared to 0.8% in 2005, 1.9% in 2004 and 0.5% in 2003). Of those that lived outside the UK more than a fifth (22.5%) lived in the Republic of Ireland and were deliberately recruited to be reported elsewhere.

2 Sample description

The final sample consists of 12,155 people who indicated they were male, lived in the UK, had sex with a man in the last year and / or had a non-heterosexual sexual identity and had not completed the survey already.

This chapter describes the sample using the following variables: area of residence; age; ethnicity; education; sexual identity and gender of sexual partners in the last year; household living arrangements; male relationship status, civil partnership and marriage. Questions in the rest of the report will be examined to see how they vary by these characteristics.

2.1 COUNTRY AND REGION OF RESIDENCE

Men were asked *Which country do you currently live in?* For the purposes of this report those men who indicated a country outside the United Kingdom were excluded. The number 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 population for comparison.

Country of residence (n=12155, missing 0)	% (n) overall	% (n) by recruitment method		Mid-2006 estimate of UK population (ONS)
		Internet	Booklet	
England	89.0	85.2 (7063)	96.9 (3750)	83.8
Wales	3.5	3.8 (318)	2.7 (105)	4.9
Scotland	5.8	8.4 (695)	0.2 (9)	8.4
Northern Ireland	1.8	2.5 (210)	0.1 (5)	2.9

Booklet distribution occurred in England and Wales only but 14 men living in Scotland or Northern Ireland completed one.

If we compare the country distribution of the internet sample to that all males in the UK, we find it to be fairly similar, but with slightly fewer men in the sample living in Wales or Northern Ireland. What we can say from this is that the internet sample is distributed similarly as the total male population. However, we cannot say how it compares to the homosexually active male population.

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 your home postcode or the city / town you live in.* From these answers men were allocated to Primary Care Trusts and then grouped into Strategic Health Authorities and Health Boards. Data about groups of men in these smaller areas are available on www.gmss.org.uk.

In the remainder of this report we use the ten English Strategic Health Authorities, Wales, Scotland and Northern Ireland when we make geographic comparisons. Overall, 1585 men living in England gave insufficient information to allocate them to one of the regional sub-samples. The following table shows the size of the regional comparison sub-samples.

Country and SHA of residence for England (n=12155, missing 0)	% overall	% (n) by recruitment method		% Comparison groups
		Internet	Booklet	
All England (n=10813)	89.0	85.2 (7063)	96.9 (3750)	excluded
Region unknown (n=1585)	13.0	16.9 (1404)	4.7 (181)	excluded
East of England (n=663)	5.5	4.5 (377)	7.4 (286)	6.3
East Midlands (n=619)	5.1	3.7 (305)	8.1 (314)	5.9
London (n=3589)	29.5	28.5 (2363)	31.7 (1226)	34.0
North East (n=263)	2.2	1.9 (159)	2.7 (104)	2.5
North West (n=974)	8.0	7.5 (620)	9.1 (354)	9.2
South Central (n=435)	3.6	3.9 (326)	2.8 (109)	4.1
South East Coast (n=583)	4.8	5.2 (429)	4.0 (154)	5.5
South West (n=666)	5.5	4.5 (374)	7.5 (292)	6.3
West Midlands (n=645)	5.3	4.4 (361)	7.3 (284)	6.1
Yorkshire & Humber (n=791)	6.5	4.2 (345)	11.5 (446)	7.5
All Wales (n=423)	3.5	3.8 (318)	2.7 (105)	4.0
All Scotland (n=704)	5.8	8.4 (695)	0.2 (9)	6.7
All Northern Ireland (n=215)	1.8	2.5 (210)	0.1 (5)	2.0

2.2 AGE

The age profile of the sample was similar to previous years. The mean age was 35.2 years (standard deviation (sd) = 12.2, median 34, range 14-81). As in previous years, the online sample was significantly younger (mean 35.0 years, sd = 12.3, median 34, range 14-79) than the booklet sample (mean 35.7 years, sd = 11.8, median 35, range 14-81).

Age groups (n=12054, missing 101)	% overall	% (n) by recruitment method		% Comparison groups
		Internet	Booklet	
14 – 19 years old (n=869)	7.2	7.6 (631)	6.3 (238)	7.2
20 – 24 years old (n=1824)	15.1	15.8 (1301)	13.8 (523)	29.9
25 – 29 years old (n=1783)	14.8	15.2 (1251)	14.0 (532)	
30 – 34 years old (n=1645)	13.6	13.5 (1112)	14.0 (533)	28.9
35 – 39 years old (n=1838)	15.2	14.5 (1196)	16.9 (642)	
40 – 44 years old (n=1511)	12.5	12.0 (987)	13.8 (524)	20.9
45 – 49 years old (n=1010)	8.4	8.1 (671)	8.9 (339)	
50 – 54 years old (n=635)	5.3	5.4 (449)	4.9 (186)	13.0
55 – 59 years old (n=455)	3.8	3.9 (321)	3.5 (134)	
60 years old or over (n=484)	4.0	4.1 (337)	3.9 (147)	

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 of the 2001 UK Census question. Ethnicity was missing for 1.0% (n=117) of respondents. The following table shows the number of respondents in each of the sixteen ethnicity categories in the 2006 survey and in the previous four surveys.

Ethnic groups (n=12038, missing 117)		% GMSS 2001 (n=15313)	% GMSS 2003 (n=14498)	% GMSS 2004 (n=15975)	% GMSS 2005 (n=16371)	% GMSS 2006 (n=12038)	% 2006 Comparison groups
White	<i>White British</i>	83.6	84.0	82.2	81.3	79.4 (9556)	79.4
	<i>Irish</i>	2.8	3.5	2.9	3.1	3.2 (391)	13.0
	<i>Other White</i>	7.5	6.9	7.9	8.3	9.8 (1179)	
Black / Black British	<i>Caribbean</i>	0.8	0.6	0.7	0.8	0.7 (87)	1.4
	<i>African</i>	0.3	0.3	0.5	0.6	0.5 (66)	
	<i>Other Black</i>	0.1	0.1	0.2	0.1	0.1 (12)	
Asian / Asian British	<i>Indian</i>	1.0	1.1	1.1	1.2	0.9 (113)	1.6
	<i>Pakistani</i>	0.3	<0.1	0.5	0.5	0.4 (43)	
	<i>Bangladeshi</i>	<0.1	<0.1	0.1	0.1	<0.1 (5)	
	<i>Other Asian</i>	0.6	0.2	0.3	0.5	0.3 (35)	
Dual Ethnicity	<i>White & Black Caribbean</i>	0.7	0.5	0.6	0.6	0.7 (85)	2.4
	<i>White & Black African</i>	0.2	0.1	0.2	0.2	0.3 (35)	
	<i>White & Asian</i>	0.5	0.7	0.6	0.6	0.7 (81)	
	<i>Other Mixed</i>	0.6	0.6	0.6	0.6	0.7 (85)	
Chinese	0.8	0.6	0.8	0.8	1.0 (120)	2.2	
All other ethnicities	0.3	0.7	0.8	0.8	1.2 (145)		

In the 2006 survey 20.6% of respondents (n=2482) were members of ethnic minorities including 7.6% who were members of visible ethnic minorities. Both these proportions were slight increases on previous GMSS surveys and the proportion from visible ethnic minorities is similar to that in the general UK population.

2.4 EDUCATION

Men were asked *How many YEARS of full-time education have you had since the age of 16?* and were offered the responses: *None / 1 year / 2 years / 3 to 5 years / 6 or more years.* The following table compares the education profile with the 2004 and 2005 surveys. The educational profile across the last three survey years has been very similar.

Years of full-time education since the age of 16 (n=12111, missing 44)	% GMSS 2004 (n=15817)	% GMSS 2005 (n=16377)	% GMSS 2006 (n=12111)	% 2006 Comparison groups
None	16.3	16.0	15.5	15.5
1 year	7.5	7.3	6.6	22.1
2 years	16.1	16.0	15.4	
3-5 years	34.2	33.4	33.2	
6 or more years	25.9	27.3	29.2	62.4

In the UK, full-time education is compulsory up to the age of 16. In 2004-05, 73% of 16 year olds and 58% of 17 year olds were in post compulsory education in the UK (Office for National Statistics 2006). This rate has been rising over the last five years and the government has suggested that the compulsory school leaving age may be increased to 18. Since 84.5% of our sample report full-time education beyond the age of 16 years, education rates may be higher among our sample than the general population. This is congruent with the data from the first *National Survey of Sexual Attitudes and Lifestyles* (Johnson *et al.* 1994) which suggested that homosexually active men had been in full-time education longer than other men.

2.5 SEXUALITY & GENDER OF SEXUAL PARTNERS

Respondents were asked *What term do you usually use to describe yourself sexually?* and were required to tick one of: *Gay; Bisexual; I don't usually use a term; Any other term.* Those who indicated *any other term* were asked *What?* and given a line to write on. They were also asked *In the last 12 months have you had sex with...?* and were offered the options: *No one, Women only, Both men and women, Men only.* Men who indicated they had not had sex with a man in the last year, and gave no indication of a gay, bisexual or queer identity were excluded from the study.

Small numbers of respondents declined to indicate their sexual identity (n=20, 0.2%) or the gender of their sexual partners (n=16, 0.1%). 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.

Sexual identity by gender of sexual partners in the last year (n=12120, missing 35)		% by gender of sexual partners			
		No partners (n=651)	Women only (n=93)	Men and women (n=1022)	Men only (n=10354)
		5.4	0.8	8.4	85.4
Gay (n=10159)	83.8	4.4	0.1	1.8	77.5
Bisexual (n=1175)	9.7	1.0	0.6	5.0	3.2
Don't usually use a term (n=710)	5.9	<0.1	<0.1	1.5	4.3
Any other term (n=76)	0.6	<0.1	<0.1	0.1	0.4

Over three quarters (77.5%, n=9391) of the sample identified as gay and had sex with only men in the last year. The next largest group were men who identified as bisexual who had sex with both men and women in the last year (5.0% of the sample, n=601). Almost as numerous (4.4%, n=530) were gay men who had not had sex with anyone in the last year.

A small but significant group of men (5.9% of the total sample) indicated that they did not usually use a term for themselves sexually. The majority of these men had sex with men. They were more likely to have also have sex with women than the gay men but less likely to do so than the bisexual men.

Overall, 5.4% (n=651) of the sample had sex with no one in the last year and 0.8% (n=93) had sex with women only. Of the remaining 93.8% who had sex with men, 8.4% (n=1022) also had sex with women and 85.4% had sex with men only (n=10354). This means 9.0% of all the men that were homosexually active in the last year, were also heterosexually active in the same time period. This is much smaller than the 57% estimated in the first *National Survey of Sexual Attitudes and Lifestyles* (Johnson *et al.* 1994, p.209).

The proportion of homosexually active men who are also heterosexually active varied significantly by ethnicity, being 8.7% among White men, 12.0% among Black men and 16.5% among Asian men.

In the rest of the report we compare the men that had sex only with men in the last year (85.4% of the sample), with men who had sex with men and women (8.4%), those that had sex with women only (0.8%), and those that had no sex in the last year (5.4%).

2.6 HOUSEHOLD LIVING ARRANGEMENTS

Men were asked *Who do you live with?* and required 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 specify who.

Overall, a third (34.9%, n=4217) indicated they lived alone. Slightly fewer (28.7%, n=3469) lived with a male partner and 4.5% (n=539) lived with a female partner. A small group of men (n=19, 0.2% of the entire sample) lived with both male and female partners.

Overall, 2.1% (n=258) lived with children. Of these, 57.0% also lived with a female partner and 15.5% lived with a male partner. A quarter (27.5%) of men who lived with children did not also live with a partner.

Other family members was ticked by 15.4% (n=1861), including parents, grandparents, uncles and aunts, siblings and cousins. A similar proportion (15.3%) lived with friends, and 3.0% 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 (38.4% compared to 33.2%) and less likely to live with a male partner (26.4% compared to 29.7%); a female partner (1.9% compared to 5.6%); or with children (1.3% compared to 2.5%).

2.7 REGULAR SEXUAL RELATIONSHIPS, CIVIL PARTNERSHIPS AND MARRIAGE

Men were asked *Do you have a regular MALE sexual partner at the moment (one or more)?* and *Do you have a regular FEMALE sexual partner at the moment (one or more)?* The possible responses for both questions were: *No; Yes one regular partner; Yes, more than one regular partner.* Whether men had a regular male partner was missing for 0.4% (n=45) and regular female partner for 3.4% (n=416), suggesting the figures given for having regular female partner/s is slightly inflated.

Overall, 54.6% (n=6612) had a regular male partner and 5.1% (n=593) had a regular female partner. Having a regular male partner was negatively associated with having a regular female partner. While overall 5.1% had a regular female partner, this was 6.7% of the men who did not have a male regular partner and 3.7% of those who did.

The introduction of civil partnerships in December 2005 provided a new means of triangulating the size of the male homosexually active population, based on the Census, the two National Surveys of Sexual Attitudes and Lifestyles (NSSAL) and the number of civil partnerships made.

In mid-2005 the ONS estimated there to be 23,533,100 males living in the UK aged 16 and over. The second National Survey of Sexual Attitudes and Lifestyles (Johnson *et al.* 2001) estimated that 2.6% (range 2.2%–3.1%) of adult males (aged 16–49 years) had sex with a man in the last 5 years. Using this proportion for all adult males gives 611,860 (range 517,728–729,526) homosexually active men living in the UK. Since sexual activity declines with age this figure may be an over-estimate.

The first NSSAL (Johnson *et al.* 1994: p.209) estimated that 57% of men who had sex with men in the last five years also had sex with women, giving 348,760 (range 295,105–415,830) behaviourally bisexual men and 263,100 (range 222,623–313,696) exclusively homosexually active men.

GMSS 2006 fieldwork took place over 24th July to 16th October 2006. By the end of June 2006 there had been 7,068 male civil partnerships formed in the UK and 4,109 female civil partnerships (ONS 2008). By the end of September the figure was 9,572 male partnerships (and 6,100 female). This was 14,136 men in civil partnerships at the beginning of fieldwork and 19,144 at the end. A mid-point estimate is therefore 16,640.

If civil partnerships were equally common among all homosexually active men we would expect the proportion of homosexually active GMSS respondents in a civil partnership (CP) to be 16,640 / 611,860 which is 2.7% (range 2.3%–3.2%).

However, we think it unlikely that CPs are equally common among behaviourally bisexual men and exclusively homosexually active men. If all CPs were in exclusively homosexually active men our estimate for the proportion of exclusively homosexually active GMSS respondents who were in a CP would be 16,640 / 263,100 which is 6.3% (range 5.3%–7.5%). In this case, the proportion of behaviourally bisexual men in CPs would be zero.

Respondents were asked *Are you currently...* and were offered the three options: *in a civil partnership with a man; in a marriage with a woman; in neither of these*. During pre-testing it was apparent that men in long-term relationships (but not civilly partnered) took offence at not being able to indicate this, so the option *Other, What?* was added. Several men used this option to indicate they were planning civil partnerships. As a separate question was asked about relationship status men who indicated they were in a long-term relationship or were planning a civil partnership were re-coded as not in a CP or marriage.

Overall, 403 men (3.3% of all) declined to give an answer. Of those who did answer, 6.6% (n=772) indicated they were in a civil partnership, and 4.6% (n=539) indicated they were married. Responses varied by gender of sexual partners as shown in the following table.

Civil partnerships and marriage by gender of sexual partners in the last year (n=11748, missing 407)	% overall	% by gender of sexual partners			
		NO partners (n=624)	Female partner/s only (n=86)	Male & female partner/s (n=986)	Male partner/s only (n=10052)
Civilly partnered to a man (n=770)	6.6	3.0	0.0	4.1	7.1
Married to a woman (n=538)	4.6	2.2	30.2	31.8	1.8
Neither (n=10440)	88.8	94.7	69.8	64.1	91.1

As predicted, whether men said they were in a CP or not was associated with the gender of their sexual partners in the last year. Of the exclusively homosexually active men, 1.8% said they were in marriages and 7.1% said they were in civil partnerships, which is within the 5.3%–7.5% range predicted above. However, this range was dependent on no behaviourally bisexual men being in CPs. In this sample though 4.1% of the behaviourally bisexual men said they were in CPs and 31.8% in marriages. In addition, a relatively large proportion (3.2%) of men who had no sexual partners also said they were in a CP.

Looked at another way, of the men who said they were currently in a CP (n=770), 92.3% only had sex with a man in the last year. A further 2.6% said they had no sexual partners in the last year. Given that many men entering CPs are older and others may be unwell, this seems possible, if not probable. None of the men in CPs said they had sex only with women in the last year but 5.2% said they had sex with both men and women.

Respondents were also asked *Have you ever...* and were asked to tick as many as apply from: *had a civil partnership dissolved; been divorced from a woman; survived a civil partner who has died; survived a wife who has died; none of the above.*

Overall, 8.2% (n=956) said they had been divorced from a woman and 0.7% (n=77) said they had survived a wife who had died. More problematically 0.5% (n=58) said they had survived a civil partner who has died and 1.2% (n=138) indicated they had had a civil partnership dissolved. Since dissolution of civil partnerships can only occur after 12 months of their formation, none of the respondents in GMSS 2006 could have had a CP dissolved. Of the 138 men who said they had done so, 54 (or 41.5%) also said they were currently in a civil partnership.

Although some of these findings are in line with our predictions, others require some accounting for. Self-completion surveys such as GMSS are not very accurate tools and their utility at describing patterns in populations declines for events which are relatively uncommon. The concept of civil partnership is very new and we suspect many men would not have appreciated the specificity the question was asking for, instead responding affirmatively to being in a CP when they were in a committed relationship, probably cohabiting. Similarly, having had a CP dissolved could well have meant to many men simply the end of a committed relationship. That we may suspect bisexual men to be less knowledgeable of CP legislation than gay men (and to therefore class relationships with men as CPs more frequently) goes some way to accounting for the proportion of bisexual men who said they were in a CP. With the passage of time and more people becoming familiar with the concept of CPs we would expect the validity of responses to this question to improve.

3 HIV and hepatitis C testing

3.1 HIV TESTING HISTORY

Men were asked a set of questions about HIV testing. All were asked *Have you ever received an HIV test result?* Overall, 62.0% said they had ever tested (92 men did not answer or 0.8%). Those who had tested were asked *What was your most recent test result?* Of the 7540 men who said they had ever tested for HIV, 12.7% had been diagnosed with HIV (76 or 1.0% declined to reveal their last result). So in the sample overall, 37.7% (n=4523) had never tested, 54.4% (n=6515) had tested HIV negative and 7.9% (n=949) had tested HIV positive.

Men who had tested negative for HIV were asked *When was your most recent negative result?* Of the 6515 men who indicated their last test was negative, more than half (54.6%, n=3538) said their most recent test was in the last year, and more than a third (35.5%, n=2297) said their last test was between 1 and 5 years previously. One in ten (9.9%, n=641) men reporting a negative HIV test result had not tested in the previous five years.

HIV testing history and recency of negative tests (n=11987, missing 168)		% (n) Overall
Never tested		37.7 (4523)
Last tested negative	within last year	29.5 (3538)
	1 to 5 years ago	19.2 (2297)
	more than 5 years ago	5.4 (641)
	recency missing	0.3 (39)
total, last test negative		54.4 (6515)
Tested positive		7.9 (949)

Those who had tested HIV positive were asked *When were you first diagnosed with HIV?* and were asked to supply a month and a year. Of the 949 men who had tested HIV positive, 16.3% (n=153) said their HIV diagnoses had occurred in the last year, and more than half (53.1%) had been diagnosed less than five years.

Therefore of the entire sample, including those who had never tested, 30.9% (n=3691) had tested for HIV within the last year, and 1.3% (n=153) had received a positive HIV diagnosis in the last year.

3.1.1 Area of residence and HIV testing

The following table shows lifetime HIV testing history and HIV testing in the last year by the area of residence of respondents.

HIV testing history by area of residence	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
All England (n= 10,656 & 10,608)	36.1	55.5	8.4	68.3	30.4	1.4
East of England (n=655 & 655)	43.2	53.0	3.8	70.1	28.7	1.2
East Midlands (n=613 & 607)	43.4	51.2	5.4	72.8	26.0	1.2
London (n=3529 & 3507)	23.3	63.9	12.7	62.0	36.4	1.6
North East (n=260 & 260)	49.6	44.6	5.8	77.7	21.9	0.4
North West (n=965 & 960)	37.1	50.1	12.8	68.5	29.3	2.2
South Central (n=434 & 431)	40.3	55.5	4.1	69.6	29.0	1.4
South East Coast (n=579 & 578)	36.4	58.0	5.5	68.7	30.6	0.7
South West (n=662 & 661)	41.5	54.8	3.6	70.8	28.6	0.6
West Midlands (n=638 & 638)	42.8	47.6	9.6	71.6	25.9	2.5
Yorkshire & Humber (n=780 & 775)	39.4	56.3	4.4	69.2	30.1	0.8
All Wales (n=417 & 414)	51.6	44.6	3.8	76.6	22.5	1.0
All Scotland (n=701 & 701)	51.1	44.7	4.3	74.9	24.8	0.3
All Northern Ireland (n=213 & 213)	49.3	48.4	2.3	75.6	23.9	0.5

Ever having tested for HIV varied across the four home countries being more common among English residents (63.9%) than among the residents of the other three countries (50.7% to 48.4%). Ever having tested also varied within England, being highest in London (76.7%) and lowest in the North East (50.4%).

The prevalence of diagnosed HIV varied across the four home countries being higher in England (8.4%) than the other three. It also varied within England, being highest in the North West and in London and lowest in the South West and East of England.

Recent testing also varied in a similar pattern, with both testing in the last year and testing positive in the last year being more common in England than the other three countries. Within England receiving a positive diagnosis within the last year was most common in the West Midlands (2.5%) and the North West (2.2%) rather than London (1.6%). This suggests that HIV incidence among gay men is becoming more geographically even across England and that the historical concentration of HIV infection in London is declining.

3.1.2 Age and HIV testing

The following table shows testing history and recent testing across the age range.

HIV testing history by age groups	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
<20 (n=870 & 867)	74.8	24.7	0.5	79.6	20.2	0.2
20s (n=3562 & 3551)	42.2	54.2	3.5	63.0	35.9	1.1
30s (n=3451 & 3433)	26.8	62.6	10.6	65.4	32.4	2.1
40s (n=2479 & 2469)	30.4	56.2	13.4	73.5	25.4	1.1
50+ (n=1547 & 1540)	43.1	49.7	7.2	78.6	20.7	0.6

The prevalence of diagnosed HIV was lowest among those under 20 years of age and rose, step-wise, to peak among in their 40s before declining among men in their 50s or older. The annual incidence of diagnosis followed a similar pattern but peaked in the 30s age group. The median age of men who tested positive in the previous 12 months was 35 years (range 18-61, mean 35.0, standard deviation 8.85, n=150). This is congruent with data from HIV diagnoses reports compiled by the Health Protection Agency (Health Protection Agency Centre for Infections and Health Protection Scotland 2008).

HIV infection must occur before HIV diagnosis. However, the profile of the length of time between infection and diagnosis is poorly understood. In 2003 the Chief Medical Officer estimated that the median length of time was 6 years (Donaldson 2004). Our best estimate of the average length of time between HIV infection and diagnosis for homosexually active men in the UK today is 5 years. This suggests that in order to maximise their impact on HIV incidence:

- **HIV prevention programmes should aim to serve men across the age range but the average age of clients should be around 30 years of age or less.**

This means interventions with a younger client profile should be prioritised over those with an older client profile.

3.1.3 Ethnicity and HIV testing

The following table shows the HIV testing history and recent HIV testing within the different ethnic groups.

HIV testing history by ethnic groups	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
White British (n= 9449 & 9413)	40.6	51.8	7.6	71.3	27.4	1.3
White other (n= 1553 & 1542)	22.3	67.6	10.0	59.1	39.6	1.3
Black (n=162 & 162)	22.8	61.7	15.4	59.9	39.5	0.6
Asian (n=192 & 192)	44.8	53.1	2.1	66.7	33.3	0.0
Mixed (n=277 & 275)	33.9	59.6	6.5	61.1	37.1	1.8
Other (n=257 & 255)	36.6	56.8	6.6	67.1	31.4	1.6

As in previous years of the survey, the prevalence of diagnosed HIV was highest among Black men and lowest among Asian men. In terms of testing in the last year, the Black men and White other men were most likely to have tested and the White British men were least likely to have tested. However, among those taking a test in the last year there were no significant differences in the results received across ethnic groups. This suggests that in order to maximise their impact on HIV incidence and to minimise health inequalities:

- **HIV prevention programmes should over-serve Black men.**

This means that compared to the men who do not get an intervention, those who do should have a higher proportion of Black men among them.

3.1.4 Education and HIV testing

The following table shows HIV testing history and recent HIV testing across the education groups.

HIV testing history by education groups	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
Low (n=1841 & 1833)	41.8	48.7	9.5	74.0	24.5	1.5
Medium (n=2641 & 2630)	44.9	47.6	7.5	72.8	26.0	1.1
High (n= 7470 & 7438)	34.1	58.2	7.7	66.5	32.2	1.3

As in previous years, the prevalence of diagnosed HIV infection was highest among men with low levels of formal education and lowest among men with high education. Men with lower levels of education were least likely to have tested in the last year, but were not more or less likely to have tested positive. This suggests that in order to maximise their impact on HIV incidence and to minimise health inequalities:

- HIV prevention programmes should over-serve men with lower levels of formal education.

This means that compared to the men who do not get an intervention, those who do should (as a group) be less well educated.

3.1.5 Gender of sexual partners and HIV testing

The following table compares HIV testing history and recent HIV testing by the gender of men's sexual partner in the last year.

HIV testing history by gender of sexual partners in the last year	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
NO partners (n=633 & 632)	70.8	23.2	6.0	93.4	6.2	0.5
Female partner/s only (n=88 & 88)	71.6	26.1	2.3	95.5	3.4	1.1
Male & female partner/s (n=1009 & 1000)	51.8	44.8	3.4	72.0	26.9	1.1
Male partner/s only (n=10250 & 10209)	34.0	57.5	8.5	67.1	31.6	1.3

Ever having tested was most common among men who were exclusively homosexually active in the last year (66.0% had ever tested) with men that had sex with men and women less likely to have ever tested (48.2%). Testing in the last year showed a similar pattern, with both testing and testing positive being more common in exclusively homosexually active men.

3.1.6 Relationship status and HIV testing

The following table compares HIV testing history and recent HIV testing among men who had a current relationship with a man, and those that did not.

HIV testing history by current relationship status	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
No relationship with a man (n=5425 & 5406)	44.1	49.6	6.3	70.5	28.4	1.1
Current relationship with a man (n=6536 & 6504)	32.5	58.3	9.2	67.9	30.7	1.5

Men in a current relationship with a man were more likely to have ever tested, and to have tested positive, compared to men not in a current relationship with a man. Similarly men in a current relationship with a man were more likely to have tested in the last year, and to have tested positive in the last year.

3.1.7 Number of male partners and HIV testing

The following table compares HIV testing history and recent HIV testing by the number of male partners respondents had in the last year. The number of male partners respondents had in the last year is addressed more completely in Chapter 4.

HIV testing history by number of male partners in the last year	% HIV testing history			% HIV testing in last year		
	Never tested	Last test negative	Tested positive	Not tested	Tested negative	Tested positive
One (n=2445 & 2434)	44.8	50.8	4.5	80.3	19.0	0.7
2, 3, 4 (n=3156 & 3145)	44.5	50.9	4.7	71.2	28.1	0.8
5 to 12 (n=2746 & 2736)	30.7	61.6	7.7	61.9	36.9	1.2
13 – 29 (n=1444 & 1432)	26.1	62.4	11.5	58.4	39.7	1.9
30+ (n=1324 & 1318)	16.5	63.7	19.7	55.1	41.5	3.4

Ever having tested was most common among men with the highest numbers of male partners in the last year, and was increasingly uncommon among men with fewer numbers of partners. Ever having tested positive was also most common among men with the highest numbers of male partners and was increasingly uncommon among men with fewer partners. Testing in the last year showed a similar pattern, with both testing and testing positive being more common among men with the highest numbers of male partners.

- HIV prevention programmes should over-serve men with higher numbers of male sexual partners.

3.2 HEPATITIS C TESTING HISTORY

Hepatitis C virus (HCV) is a blood-borne virus that affects the liver. It can be spread during any activity involving blood-to-blood contact. Most commonly these are blood and tissue transfusion from an uninfected to an infected person and by re-using a needle previously used by an infected person (when injecting drugs or tattooing). Two other routes of transmission have also been proposed: reusing snorting tubes previously used by an infected person (when inhaling drugs through the nose), and sexual practices with an infected person involving blood.

The incidence of HCV significantly increased among gay and bisexual men with HIV in Brighton and London between 2001 and 2006 (Giraudon *et al.* 2008). In two recent cross-sectional surveys among HIV positive men in the UK, HCV has been shown to be associated with multiple sex partners, particularly multiple simultaneous partners (sex with more than one person at the same time, or sex parties, Danta *et al.* 2007) and fisting (Turner *et al.* 2006). Neither of these studies asked respondents about lindrism (water-sports, or sex with urination).

In response to requests from health promotion partners, this survey included three questions about hepatitis C testing and diagnosis. The questions were designed to describe the level and distribution of HCV testing and diagnosis in order to prioritise and target health promotion interventions. We were not attempting to establish the casual pathways of HCV transmission. If we wished to do this, a cross-sectional survey would not be the research design we would choose. However, in the same way that we report the associations between number of partners and HIV testing history (to target and prioritise interventions), we have reported associations between specific sexual behaviours in the last year and HCV testing and diagnosis.

First men were asked *Have you ever had a test for HEPATITIS C?*. Overall, 0.9% declined to answer this question and a further 7.2% indicated *Don't know*. Of the remaining 11,176 men 51.3% (n=5729) said they had been tested for HCV.

These men were then asked *Have you ever been diagnosed with HEPATITIS C?*. Of the men who said they had been tested, 0.6% (n=32) declined to indicate whether they had been diagnosed and a further 0.7% (n=40) said *Don't know*. Of the remaining 5,657 men, 4.4% (n=250) said they had ever been diagnosed with hepatitis C. Of these 199 men said they no longer had the virus and 51 said they still had it.

We treat men who answered *don't know* to ever having tested for HCV (or to having been diagnosed with HCV) as not having been tested or diagnosed. Overall then 2.1% (n=250) of the whole sample had been diagnosed with HCV and 0.4% (n=51) thought they currently had HCV.

3.2.0 HIV testing history and HCV diagnosis

Ever having been diagnosed with HCV was significantly more common among men with diagnosed HIV (8.5%) than among men whose last HIV test was negative (2.0%) or who had never tested for HIV (0.8%). Currently having HCV was also significantly more common in men with diagnosed HIV (3.4% compared with 0.2% in men tested negative and 0.1% of men who had never tested for HIV). In the sample overall, 65% of men with current HCV infection also had diagnosed HIV.

- **HCV diagnosis and prevention interventions should over-serve men with diagnosed HIV.**

3.2.1 Area of residence and HCV diagnosis

Men who had been diagnosed with HCV lived in all parts of the UK but those living in London were significantly more likely than men living elsewhere to have ever been diagnosed (3.5% vs. 1.4%) or to be currently living with HCV (0.7% vs 0.3%). Controlling for having tested positive, men living in London were two times (AOR 2.07 95%CI 1.59-2.70) more likely to have ever been diagnosed with HCV but were not significantly more likely to currently have HCV.

3.2.2 Age and HCV diagnosis

Ever having been diagnosed with HCV increased with increasing age from 0.9% of men under twenty, 1.1% of men in their twenties, 2.3% of men in their thirties or forties and 4.0% of men aged fifty or over. Men who had ever been diagnosed with HCV (n=244, median age 39 years, range 16-81, mean 41.2, standard deviation 13.12) were older, as a group, than men who had not (n=11698, mean 34 years, range 14-80, mean 35.1, sd 12.11). There was no significant difference in age between men with current HCV infection and those without.

3.2.3 Ethnicity and HCV diagnosis

Ever having been diagnosed with HCV was significantly more common among Black men than other ethnic groups (6.3% compared to 2.0% in all other ethnic groups). After adjusting for having tested HIV positive, Black men were three times (AOR 3.07 95%CI 1.56-6.04) more likely to have been diagnosed with HCV. Small absolute numbers of men meant ethnic group differences in currently having HCV were unlikely to reach statistical significance.

- **HCV diagnosis and prevention interventions should over-serve Black men.**

3.2.4 Education and HCV diagnosis

Ever having been diagnosed with HCV was most common among men with low levels of formal education (2.9%), less common among men with medium education (2.3%) and least common among men with high education (1.8%). Compared to men with high education (and adjusting for having tested HIV positive), men with low education were more likely (AOR 1.48 95%CI 1.06-2.06) to have ever been diagnosed with HCV.

Similarly, current infection was more common in men with lower (0.8%) rather than medium (0.4%) or high (0.3%) education. Controlling for HIV-positivity, men with low education were two times (AOR 2.04 95%CI 1.05-3.98) more likely to be currently living with HCV than men with high education.

- **HCV diagnosis and prevention interventions should over-serve men with lower levels of formal education.**

3.2.5 Gender of sexual partners and HCV diagnosis

Ever having had, or currently having HCV was not associated with the gender of men's sexual partners in the last year.

3.2.6 Relationship status and HCV diagnosis

Ever having been diagnosed with HCV was more common among men with a current regular partner (2.3%) than among men without a regular partner (1.8%) but this difference did not persist after adjusting for having tested HIV positive. Similarly, currently having HCV was marginally more common in men a regular partner (0.5%) compared with men without a regular partner (0.3%) but this difference did not persist after adjustment.

3.2.7 Number of male partners and HCV diagnosis

Ever having been diagnosed with HCV was associated with having higher numbers of male sexual partners in the last year, increasing step-wise from 1.0% of men with one male partner to 4.4% of men with thirty partners or more. This was not simply because men with higher numbers of partners were more likely to have HIV. Compared to those with one partner in the last year, those with 5-12 partners were 2.09 times (AOR 95%CI 1.30-3.35) more likely to have ever been diagnosed with HCV, while those with 13-29 partners were 3.59 times (AOR 95%CI 2.22-5.82) and those with 30 or more partners were 4.43 times (AOR 95%CI 2.77-7.11) more likely to have been diagnosed with HCV.

Similarly, the proportion of men who currently had HCV increased from 0.2% among those with one partner or 2-4 partners, 0.5% in those with 5-12 partners, 0.7% in those with 13-29 partners and 1.0% in those with 30 or more partners. However, adjusting for having tested HIV positive, the association between number of sexual partners and currently having HCV was no longer statistically significant.

- **HCV diagnosis and prevention interventions should over-serve men with higher numbers of male partners.**

3.2.8 HCV and sexual acts in the last year

The annual incidence of specific sexual behaviours (and their associations with demographic characteristics) is reported in Chapter 4.

Overall, ever having been diagnosed with HCV was positively associated with having fisted, been fisted or engaging in lindinism (either way), in the last year. It was negatively associated with receptive sucking to ejaculation and insertive sucking. Controlling for having tested positive, the negative associations lost statistical significance. Controlling for having tested positive, living in London, age, ethnicity, education and number of sexual partners, having ever been diagnosed with HCV remained positively associated with having been fisted (AOR 1.93, 95%CI 1.25-2.98) and having been pissed on (AOR 1.85, 95%CI 1.16-2.94) in the last year.

Overall, currently having HCV was positively associated with fisting, being fisted and being pissed on, and was negatively associated with receptive oral sex to ejaculation and insertive oral sex. Controlling for having tested HIV positive, living in London, age, ethnicity, education and number of sexual partners, currently having HCV remained positively associated with fisting (AOR 3.94, 95%CI 1.63-9.52), having been fisted (AOR 2.79, 95%CI 1.21-6.46). It was *negatively* associated with receptive oral sex to ejaculation (AOR 0.45, 95%CI 0.21-0.96) and having pissed on a man (AOR 0.29, 95%CI 0.10-0.89) in the last year.

- **HCV diagnosis and prevention interventions should over-serve men who engage in fisting and being fisted, outside a monogamous relationship.**

3.3 SUMMARY & IMPLICATIONS FOR PROGRAMME PLANNING

In order to maximise their impact on future HIV infections, prevention programmes need to be encountered by men more likely to be involved in HIV transmission in the future. One way of describing who these men will be is to look at which groups HIV is most common in. While diagnosed infection obviously represents only those men with HIV who have tested for HIV, testing for HIV is associated with sexual risk, and both testing and testing positive are more common in the same groups. The men with HIV who have not yet been diagnosed will look most like those who have already done so.

While the number of gay and bisexual men living with diagnosed HIV in the UK has only ever risen since the *Gay Men's Sex Survey* started, the groups in which being positive is more common has remained remarkably stable. Living with diagnosed HIV remains more common among:

- **Black (ie. African or Caribbean) men rather than other ethnic groups;**
- **men with lower rather than higher levels of formal education;**
- **men with more rather than fewer male sexual partners;**
- **men who have sex with men only rather than men who have sex with both men and women.**

In each case, this suggests HIV prevention programmes should *over-serve* men in these groups relative to men not in these groups. This requires programmes to know these characteristics for their population of concern and to ensure that priority groups are over-represented in their interventions. For example, if an agency's population of concern is locally resident men, and in that population say 30% left school before or at 16 years of age, then more than 30% of the clients of that agency should have left school before or at 16 years of age. If 2% of the local MSM population is Black, the agency should be seeing more than 2% of Black men in its interventions.

In terms of age, the younger men are, the longer period of time in the future they will have in which to acquire HIV. Therefore younger men are more likely to acquire HIV in the future than older men. Depending on how long into the future an intervention is expected to have an effect, the age profile of clients may vary. If an intervention is expected to last indefinitely (a skills building workshop for example) the client group should be as young as possible. If an intervention's impact is expected to last for only a short period of time (condom distribution for example), the client profile should look more like the age profile of men sero-converting. However, no *HIV prevention* intervention should have a client age profile above the age at which men sero-convert. The average age of HIV sero-conversion among MSM in the UK is about 30 years of age. That is, half of the men acquiring HIV are under 30 at the time. This suggests that:

- **All HIV prevention interventions should have an average client age of 30 years or less.**

Hepatitis C (HCV) is a relatively new concern among gay and bisexual men's health promoters. It is very disproportionately affecting men living with HIV, and HCV interventions should be benefiting this group. Among men with HIV, those with higher numbers of male sexual partners, especially those who engage in fisting and attend sex parties, should be the priority.

4 Sex and HIV transmission risks

This chapter looks at sexual behaviour. It describes the number of male partners respondents had in the preceding year, then examines their sexual practices in the same time period. Finally it considers the use of poppers (nitrite inhalants) during sex in the last year, particularly during unprotected receptive anal intercourse by men not diagnosed with HIV (a key HIV risk behaviour). Since this chapter examines sexual behaviour and HIV risk it excludes the 6.2% of the entire sample who had not had sex with a man in the last year.

4.1 NUMBERS OF MALE SEXUAL PARTNERS

Previous *Gay Men's Sex Surveys* have demonstrated that having higher numbers of sexual partners is positively associated with a higher probability of involvement in sexual HIV risk behaviours. However, HIV health promoters in the UK do not generally attempt to reduce the overall number of male sexual partners that gay and bisexual have. Instead HIV prevention programmes endeavour to prioritise the HIV prevention needs of men with larger numbers of sexual partners rather than fewer, as unmet need in the former is more likely to result in HIV transmission than unmet need in the latter. In this section we look at which demographic groups were most likely to have higher numbers of male partners.

Men were asked *In total, how many MEN have you had sex with in the last 12 months?* and offered six banded responses. The following table shows the proportion of respondents (who had sex with a man) giving each answer overall and the proportion in each area or residence giving each answer. Each row in the table sums to 100%.

Men who had sex with a man in the last year		% with each number of male sexual partners in the last year				
		One	2, 3 or 4	5 to 12	13 to 29	30+
All men who had sex with a man in the last year (n=11226)		21.9	28.4	24.6	13.1	12.0
Area of residence	All England (n=9992)	21.6	27.9	24.9	13.2	12.4
	East of England (n=610)	23.3	28.5	24.3	14.3	9.7
	East Midlands (n=557)	30.2	29.4	24.1	9.7	6.6
	London (n=3420)	16.2	22.5	26.3	17.0	18.0
	North East (n=239)	27.2	37.2	21.8	7.1	6.7
	North West (n=895)	21.5	32.8	24.7	10.1	10.9
	South Central (n=402)	23.9	30.1	24.6	11.2	10.2
	South East Coast (n=549)	24.2	29.0	22.4	15.5	8.9
	South West (n=618)	25.1	32.2	25.9	10.0	6.8
	West Midlands (n=588)	24.1	29.9	22.3	10.9	12.8
	Yorkshire & Humber (n=720)	23.9	31.1	25.6	11.0	8.5
	All Wales (n=386)	28.0	30.1	19.9	11.9	10.1
	All Scotland (n=650)	21.8	34.9	22.9	10.8	9.5
All Northern Ireland (n=198)	26.3	29.8	24.2	14.6	5.1	

Among men who had sex, almost a quarter (21.9%) had sex with only one man in the last year and half (50.4%) had four male partners or less. A quarter (25.1%) had 13 or more partners and one-in-8 (12.0%) had more than thirty partners in the last year.

Number of sexual partners significantly varied across the four countries and within England across the Strategic Health Authorities. Comparing country of residence, men living in England were substantially more likely to have 30 or more male partners in the last year, especially compared to men living in Northern Ireland (12.4% compared to 5.1%). Wales was the country with the largest proportion of men having one partner only.

However, there was as much variety across England as there was difference between England and the other countries of the UK. Men living in London were most likely to have had 13 or more (35.0%) or 30 or more (18.0%) male partners in the last year, compared to all other area of residence groups. Men resident in the North East and the East Midlands were least likely to have higher numbers of male partners in the last year.

Although we were able to find differences across groups of men living in different areas of the country, what is striking is that in all areas there are many men with one sexual partner and many men with large numbers of partners. HIV prevention programmes attempting to serve all men living in an area have a diverse population of concern with regard to sexual lifestyles.

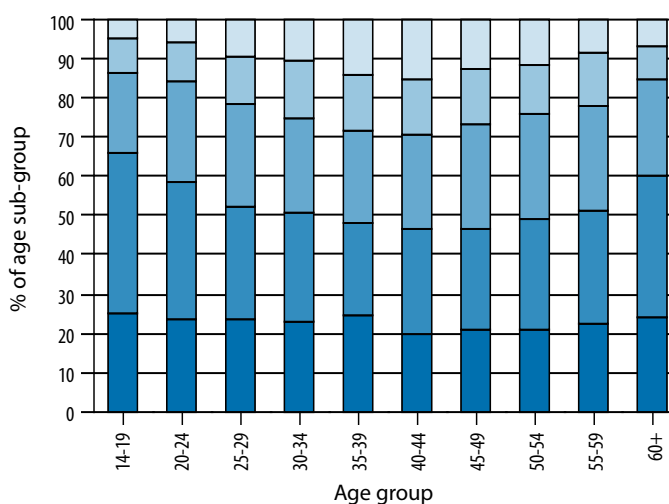
The following table shows the proportion of men in each of the other demographic sub-groups who indicated having each number of sexual partners in the last year. Each row in the table adds up to 100%. All six characteristics were significantly ($p < .01$) associated with the number of male sexual partners men had in the last year.

Men who had sex with a man in the last year		% with each number of male sexual partners in the last year				
		One	2, 3 or 4	5 to 12	13 to 29	30+
HIV testing history	Never tested (n=3937)	27.8	35.6	21.4	9.6	5.6
	Tested negative (n=6284)	19.7	25.6	26.9	14.3	13.4
	Tested positive (n=894)	12.2	16.4	23.6	18.6	29.2
Age	< 20 (n=735)	25.0	40.7	20.3	9.1	4.9
	20s (n=3350)	23.0	31.1	25.9	11.2	8.8
	30s (n=3312)	22.6	24.7	23.3	14.7	14.7
	40s (n=2350)	19.2	25.1	25.2	14.9	15.5
	50+ (n=1418)	21.3	29.8	25.9	12.3	10.7
Ethnicity	White British (n=8843)	23.0	29.2	24.5	12.3	10.9
	White other (n=1487)	18.4	23.5	25.2	15.7	17.3
	Black (n=154)	14.9	29.2	29.2	14.3	12.3
	Asian (n=172)	14.5	29.7	24.4	13.4	18.0
	Mixed (n=259)	20.5	27.8	25.1	15.1	11.6
	All other groups (n=223)	19.7	26.0	23.8	18.8	11.7
Education	Low (n=1671)	24.5	30.8	21.6	11.5	11.5
	Medium (n=2440)	23.4	30.7	24.5	11.7	9.6
	High (n=7083)	20.9	26.9	25.4	13.9	12.9
Gender of sexual partners	Men & women (n=1001)	15.1	35.8	24.7	13.3	11.2
	Men only (n=10225)	22.6	27.6	24.6	13.0	12.1
Regular male partner	No (n=4747)	11.6	32.2	29.2	15.2	11.9
	Yes (n=6454)	29.6	25.6	21.3	11.5	12.0

The biggest differences in numbers of sexual partners were seen across HIV testing history groups. Compared to the men who had tested HIV positive, those whose last test was HIV negative were 1.8 times more likely to have had only one partner in the last year (OR 1.78, 95%CI 1.44-2.19) and those who had never tested were 2.8 times more likely to have only one partner (OR 2.78, 95%CI 2.24-3.43). Conversely, men who had tested positive were much more likely to have had thirty or more partners than men whose last test was negative (OR 2.66, 95%CI 2.26-3.12) or who had never tested (OR 7.00, 95%CI 5.74-8.54).

In terms of age, the proportion of men who had one partner in the last year stayed fairly stable across the age range. However, the proportion who had large numbers of partners increased with increasing age until it peaked among men in the 40s age group and declining with increasing age above 45. Although living with diagnosed HIV also peaks among men in their 40s, the figure shows the same pattern among men *not* diagnosed with HIV. However, it should be noted that a wide range of sexual partner numbers was found at every age.

Men not tested HIV positive who had sex with a man



Compared to the White British men (and adjusting for having tested HIV positive or not), Asian men (AOR 0.56, 95%CI 0.37-0.86), Black men (AOR 0.63, 95%CI 0.40-0.98) and the men in the White other group (AOR 0.76, 95%CI 0.66-0.88) were all less likely to have had only one male sexual partner in the last year. Conversely, compared to the White British men, the Asian men (AOR 1.90, 95%CI 1.26-2.86) and the White other group (AOR 1.68, 95%CI 1.44-1.96) were more likely to have had thirty or more partners.

Compared to men with high education (and adjusting for having tested HIV positive or not), those with low education were more likely to have had only one partner (AOR 1.24, 95%CI 1.10-1.40) or 2-4 partners (AOR 1.21, 95%CI 1.08-1.36) and they were less likely to have had 5-12 partners (AOR 0.81, 95%CI 0.71-0.92) or 13-29 partners (AOR 0.81, 95%CI 0.69-0.96) but were not more or less likely to have 30 or more partners. Again what was most striking was the similarity in numbers of partners across the education range.

Compared to men who had sex with men only (and adjusting for having tested HIV positive or not), those who had sex with both women and men were less likely to have had one male partner only (AOR 0.59, 95%CI 0.49-0.71) and were more likely to have had 2-4 male partners (OR 1.41, 95%CI 1.23-1.62). Both groups were equally likely to have had 30 or more partners.

Men who had a regular male partner were much more likely than those who did not to have had sex with one man only in the last year (AOR 3.28, 95%CI 2.95-3.64). They were less likely to have 2, 3 or 4 partners (AOR 0.73, 95%CI 0.68-0.80), 5 to 12 partners (AOR 0.65, 95%CI 0.60-0.71) or 13 to 29 partners (AOR 0.72, 95%CI 0.65-0.81) but they were equally likely to have very large numbers of partners.

In summary, large numbers of sexual partners was very strongly associated with living with diagnosed HIV infection. These men are recommended as the first priority of HIV prevention programmes. Among men not diagnosed with HIV, having higher numbers of partners was more common among men in their 40s rather than those older or younger, and among men of Asian or White other ethnicity. However, men with very large numbers of partners were found among all sub-groups.

4.2 PREVALENCE OF SEXUAL BEHAVIOURS

Men were asked which of eleven different sexual behaviours they had engaged in over the preceding 12 months. The behaviours included anal and oral intercourse and the less common behaviours of fisting (ano-brachial intercourse) and water-sports (lindinism).

Proportions are of the 92.4% of respondents who had sex with a man in the past year (n=11126). Only 0.6% (n=65) of men who had any sex with a man in the last year, had not done any of the following sexual acts with a man.

Men who had sex with a man in the last year (n=11193, missing 33)	% who engaged in each sexual act in last year	
	Insertive (active, giving)	Receptive (passive, taking)
Penis – Mouth	95.5% got sucked	97.2% sucked a man 61.7% took cum in their mouth
Penis – Anus	74.2% fucked a man 61.8% fucked with a condom 41.7% fucked without a condom	73.5% got fucked 61.8% got fucked with a condom 42.2% got fucked without condom
Fist – Anus	10.3% fisted	6.4% got fisted
Urine	13.3% pissed on (or in) a man	12.3% got pissed on (or in)

4.2.1 Fellatio

Oral sex is almost universal among sexually active gay and bisexual men. Only 1.1% (121 of 11193) of men who had any sex with a man in the last year had not engaged in any oral-penile sex. The vast majority (93.5%) had both insertive and receptive, with only small minorities doing insertive only (1.7% only got sucked) or receptive only (3.4% sucked only). Of the men who had receptive oral sex, two thirds (63.5%) took ejaculate into their mouths.

4.2.2 Anal intercourse and condom use

Overall engagement in anal intercourse (AI) was less universal than fellatio but still very common, with 89.3% having engaged at least once in the last year. The majority (58.2%) of all men who sex with a man in the last year, had engaged in both insertive and receptive anal intercourse. A further 15.8% being exclusively insertive and 15.1% being exclusively receptive. It should be noted that these figures represent having done the sexual act or not in the last year. It is not the case that all sexual partners are penetrative sexual partners.

Condom use for AI remains very common. Among the men who had insertive anal intercourse (IAI) 83.3% had used a condom at least once for this and among those who had receptive anal intercourse (RAI) 84.1% had used a condom at least once for this.

However, unprotected intercourse is also common. Of the men who had IAI over half (56.2% of those who had IAI) had done so without a condom at least once. Similarly, among those who had receptive anal intercourse, over half (57.4%) had done so without a condom at least once.

Taken together, this meant that 10.7% of all men that had sex with a man in the last year had no anal intercourse; 36.1% were consistent condom users who engaged in protected anal intercourse (PAI) only, 40.7% were inconsistent condom users who had engaged in both PAI and unprotected anal intercourse (UAI) and 12.3% not used condoms at all, having engaged in UAI only.

4.2.3 Fisting

Ano-brachial intercourse was far less common than anal intercourse, with 12.8% of all men having engaged in the last year. Reciprocity was also far less common with this sexual act, with only 3.9% having both fisted and been fisted, and more having fisted only (6.5%) than having been fisted only (2.5%). Having been fisted was positively associated with having receptive anal intercourse. Only 4.8% of men who had been fisted had not also had receptive AI, compared with 28.0% of men who had not been fisted. Among men who had receptive anal intercourse, those who had also been fisted were more likely to have had unprotected anal intercourse (76.7% had) than those who had not been fisted (55.6%).

4.2.4 Lindinism

Finally, lindinism was more common than fisting but less common than anal intercourse. Overall 16.5% had engaged in water-sports, 3.3% receiving only, 4.3% giving only and 9.0% having done both. As with fisting, engagement in water-sports was positively associated with both insertive and receptive unprotected anal intercourse.

4.2.5 Variation in sexual behaviour across groups

The following table shows the proportion of men who had engaged in each act overall (either being insertive or receptive or both) and the proportion in each area of residence sub-group who had engaged.

All men who had sex with a man in the last year		% who engaged in each sexual act in last year				
		any oral	any anal	any UAI	any fisting	any lindinism
All men who had sex with a man in the last year (n=11193, missing 33)		98.9	89.3	53.0	13.1	16.8
Area of residence	All England (n=10003)	98.9	89.3	52.9	12.9	16.5
	East of England (n=614)	98.9	90.4	52.6	9.8	12.5
	East Midlands (n=565)	98.6	88.8	58.2	10.6	14.5
	London (n=3417)	98.9	90.7	51.7	15.6	19.1
	North East (n=238)	98.3	86.1	50.8	10.1	10.5
	North West (n=894)	99.3	89.7	51.1	14.4	14.9
	South Central (n=402)	99.3	87.8	53.2	7.5	18.4
	South East Coast (n=549)	98.9	88.7	51.2	10.0	18.9
	South West (n=622)	98.7	87.3	54.3	10.6	14.8
	West Midlands (n=589)	99.5	90.3	57.4	13.2	16.8
	Yorkshire & Humber (n=722)	99.3	89.1	56.2	12.6	15.1
	All Wales (n=386)	98.7	88.6	56.0	12.4	17.4
	All Scotland (n=649)	99.1	88.9	54.2	12.9	16.3
	All Northern Ireland (n=196)	99.5	86.2	52.6	12.8	15.3

There were no significant differences in sexual behaviour by country of residence.

Among residents of England, there were no significant differences in the proportion of men that engaged in oral or anal intercourse. However, having any unprotected anal intercourse was significantly more common among men resident in East Midlands (58.2%), West Midlands (57.4%) and Yorkshire & Humber (56.2%) compared to men resident in the North East (50.8%), North West (51.1%), South East Coast (51.2%) and London (51.7%). Engagement in fisting and lindinism also varied by Strategic Health Authority of residence – both were most common among London residents.

The following table shows how engagement in each of the sexual acts varied across the other demographic characteristics.

Men who had sex with a man in the last year		% who engaged in each sexual act in last year				
		any oral	any anal	any UAI	any fisting	any lindinism
HIV testing history	Never tested (n=3924)	98.6	84.9	46.5	8.8	11.6
	Last test negative (n=6271)	99.2	91.4	55.7	12.5	16.8
	Tested positive (n=890)	98.9	95.1	66.5	33.5	36.6
Age	< 20 (n=733)	99.2	91.1	56.3	12.4	11.1
	20s (n=3342)	99.2	92.0	60.7	10.7	13.7
	30s (n=3302)	99.1	91.1	53.5	13.8	18.7
	40s (n=2342)	99.1	87.1	47.0	14.4	19.6
	50+ (n=1415)	97.7	81.5	43.7	13.1	16.0
Ethnicity	White British (n=8819)	99.0	89.0	53.7	12.5	16.8
	White other (n=1482)	99.4	91.6	51.6	13.8	17.9
	Black (n=152)	98.7	88.8	55.3	15.8	11.8
	Asian (n=172)	98.3	84.9	47.7	13.4	12.2
	Mixed (n=258)	98.1	90.3	53.9	15.5	14.0
	All other groups (n=222)	97.7	90.1	52.3	13.5	9.9
Education	Low (n=1664)	98.5	87.9	54.3	12.8	16.6
	Medium (n=2434)	99.2	90.6	57.6	12.3	15.7
	High (n=7065)	98.9	89.2	51.4	13.1	16.9
Gender of partners	Men and women (n=997)	97.5	85.3	42.2	13.0	15.7
	Men only (n=10196)	99.1	89.7	54.3	12.8	16.6
Regular male partner	No (n=4733)	98.8	85.6	41.5	10.5	12.9
	Yes (n=6436)	99.0	92.1	61.9	14.6	19.3
Number of male sex partners last year	One (n=2453)	97.2	80.2	54.5	5.3	7.8
	2, 3 or 4 (n=3176)	99.0	86.3	45.3	7.1	11.2
	5 to 12 (n=2756)	99.7	93.8	53.8	12.1	16.6
	13 to 29 (n=1461)	99.4	96.0	56.9	19.4	23.3
	30+ (n=1347)	99.8	96.4	64.1	34.7	37.6

Among almost all sub-groups oral sex was most common, followed by anal intercourse, then lindinism then fisting. However, among men under 20 and among visible ethnic minorities (Black men, Asian men, men of mixed or other ethnicities), fisting was more common than lindinism.

Oral sex was almost universal and was equally common among men who had never tested, those whose last test was negative and those who had tested positive. However, compared to men who had never tested, those who had tested positive were 3.43 times more likely (OR 95%CI 2.50-4.70) to have had anal intercourse, 2.29 times more likely (OR 95%CI 1.97-2.67) to have had UAI, 5.23 times more likely (OR 95%CI 4.39-6.26) to have engaged in fisting and 4.40 times more likely (OR 95%CI 3.72-5.20) to have engaged in lindinism. In each case, the probability of engagement among men whose last test was negative lay between those who had never tested and those who had tested positive.

In terms of age, the very common acts (oral and anal sex) became slightly less common with increasing age, whereas the reverse was true for the less common acts. The following table compares the age profiles of men who engaged in each sexual act with those who did not.

Age profile (years) of those engaging or not in different sexual acts	number	median	range	mean	standard deviation	F p
Oral sex	11018	34.0	14-81	35.2	11.9	21.37 <0.001
No oral sex	116	38.0	16-77	40.4	14.9	
Anal intercourse	9943	34.0	14-80	34.8	11.7	136.52 <0.001
No anal intercourse	1191	38.0	14-81	39.1	13.6	
Unprotected Anal Intercourse	5927	33.0	14-79	33.9	11.4	165.82 <0.001
No UAI	5207	36.0	14-81	36.8	12.4	
Fisting	1425	36.0	14-78	36.1	11.5	8.41 0.004
No fisting	9709	34.0	14-81	35.2	12.0	
Lindinism	1841	36.0	14-77	36.5	10.9	22.20 <0.001
No lindinism	9293	34.0	14-81	35.1	12.1	

All the men considered here had sex with a man in the last year. Those who had engaged in oral sex were, as a group, younger than those who had not. Similarly those who had engaged in anal intercourse were younger than those who had not and those who engaged in UAI were younger than those who had not. However those who had engaged in fisting were older than those who had not engaged in fisting, and those who had engaged in lindinism were older than those who had not.

Compared with the White British men, there were no ethnic group differences in how common any engagement in oral sex was. While White other men were slightly more likely to have had anal sex (OR 1.34, 95%CI 1.10-1.63) no ethnic group was more or less likely to have had UAI than the White British men. The only other significant difference in comparisons between the ethnic majority and minorities was that all other ethnicities group were less likely than the White British men to have engaged in any lindinism (OR 0.55, 95%CI 0.35-0.85).

There were no differences in oral and anal sex across the education groups or (adjusting for having tested HIV positive) in UAI. Nor were there significant differences in the education levels of men who had engaged in fisting or lindinism.

Although oral sex was very common among behaviourally bisexual men they were significantly less likely to have engaged than exclusively homosexually active men (OR 0.37, 95%CI 0.24-0.58). Similarly, they were less likely to have engaged in anal intercourse (OR 0.66, 95%CI 0.55-0.80) or UAI (OR 0.62, 95%CI 0.54-0.70). However, they were no more or less likely to have engaged in fisting or lindinism.

Oral sex was no more or less common among those with a regular sex partner than those without. However, all other sexual acts were positively associated with having a regular partner. Men with a regular partner were more likely to engage in anal intercourse (OR 1.96, 95%CI 1.74-2.21), UAI (OR 2.29, 95%CI 2.12-2.47), fisting (OR 1.46, 95%CI 1.30-1.64) and lindinism (OR 1.61, 95%CI 1.45-1.79) than those without a regular partner.

Men who had only one sexual partner were less likely than all other groups to have engaged in oral sex, although the act was still very common among those with one partner. Engagement in anal intercourse increased stepwise with increasing numbers of partners. Compared to those with one partner, those with 30 or more were 6.67 times more likely to have had AI (OR 95%CI 4.92-9.05). UAI showed a slightly different pattern. Compared to those with one partner, UAI was less common among those with 2-4 partners (OR 0.69, 95%CI 0.62-0.77), equally common among those with 5-12 or 13-29 partners, but was more common among those with 30 or more partners (OR 1.49, 95%CI 1.30-1.71).

4.3 USE OF POPPERS DURING SEX

Behavioural research such as GMSS suggests that there are far more unprotected anal intercourse events between HIV infected and uninfected partners than there are HIV transmissions (based on the number of diagnoses that are made). A key question for HIV prevention research is what differentiates those exposures that result in HIV transmission from those that do not. A recent UK study (Macdonald *et al.* 2007) identified the use of 'poppers' (nitrite inhalants) by HIV negative men during receptive unprotected anal intercourse with a potentially HIV positive partners to be a significant factor facilitating HIV transmission.

Our previous surveys have found that poppers are the most commonly used drug by gay and bisexual men in Britain after alcohol, with 39% having used them in the last year in GMSS 2005 (see Hickson *et al.* 2007: p.37). This suggests poppers may be making a significant contribution to HIV infections in the UK, although it is the simultaneous combination of poppers use and sexual risk taking that is crucial.

The specific HIV transmission behaviour we are interested in is poppers use by HIV negative men during unprotected receptive anal intercourse with HIV positive men. The risk behaviour we can measure is this act with a man not known to be HIV negative. We approached this act by asking four nested questions. The questions, and the proportions of the entire sample answering yes, are shown below. Since poppers are theorised to facilitate HIV transmission when HIV negative men use them during sexual HIV exposure, the answers are shown separately for men who had tested HIV positive and those who had not.

Use of poppers among all men who had sex with a man in the last year (n=11,069)	% overall	% by HIV testing history		
		Not tested HIV positive (n=10181)	Tested HIV positive (n=888)	
In the last year, have you used poppers (nitrite inhalers)?	51.9	49.8	75.5	
In the last year, have you used poppers DURING PASSIVE ANAL INTERCOURSE (when getting fucked)?	of all men	33.3	30.8	61.9
	<i>of poppers users</i>	64.2	61.8	82.0
In the last year, have you used poppers during passive anal intercourse WITHOUT A CONDOM?	of all men	17.6	15.3	43.2
	<i>of those using poppers during RAI</i>	52.9	49.7	69.8
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?	of all men	7.9	6.1	29.2
	<i>of those using poppers during RUAI</i>	44.9	39.9	67.6

Poppers use is very common among gay and bisexual men. In response to the specific question on poppers in this survey, more than half (51.9%) of all men who had sex with a man in the last year had used poppers at least once in that time period. We think the apparent increase on the 39% found in GMSS 2005 is due to a more direct question which was exclusively about poppers use, and not in the context of a much larger question about a variety of drugs.

Overall, more than half of respondents who had sex with a man in the last year used poppers in the last year; among those who used them, 64.2% used them during receptive anal intercourse (RAI); among those who used them during RAI, 52.9% had done so without a condom (receptive unprotected anal intercourse, or RUAI); and among those who had used poppers during RUAI, 44.9% had done so with a man not known to have the same HIV status as the respondents.

This meant that overall, 7.9% of all men who had sex with a man in the last year, had used poppers during unprotected receptive anal intercourse with a partner not known to have the same HIV status as themselves. Each of the acts (poppers use, during RAI, during RUAI and with a potentially sero-discordant partner) was considerably more common among men with diagnosed HIV. However, even among men without diagnosed HIV, 17.6% had used poppers during RUAI and 7.9% had used them during RUAI with a man who was not known to be HIV negative.

The following table shows how poppers use varied across the country among men who had sex with a man in the last year and who had not tested HIV positive.

Men who had sex with a man in the last year, AND had not tested HIV positive (n=10181)		% use of poppers			
		Any use	During receptive AI	During receptive UAI	During receptive UAI with a potentially HIV positive partner
All men who had sex with a man in the last year, AND had not tested positive		49.8	30.8	15.3	6.1
Area of residence	All England (n=8952)	50.5	31.2	15.3	6.0
	East of England (n=577)	48.3	29.0	14.4	2.8
	East Midlands (n=513)	46.4	24.5	14.4	4.7
	London (n=2916)	54.4	36.0	15.0	6.3
	North East (n=223)	50.2	29.1	16.1	4.9
	North West (n=770)	52.7	30.1	15.7	6.9
	South Central (n=384)	44.2	29.4	15.1	6.0
	South East Coast (n=513)	46.7	28.9	14.8	6.0
	South West (n=583)	49.7	30.3	17.5	6.7
	West Midlands (n=516)	52.2	29.6	15.3	4.5
	Yorkshire & Humber (n=671)	53.2	29.5	16.2	6.3
	All Wales (n=363)	46.8	27.7	17.3	8.0
	All Scotland (n=618)	41.5	26.8	14.1	6.6
	All Northern Ireland (n=192)	49.0	27.6	15.6	5.7

Poppers use is widespread among gay and bisexual men throughout the UK, as is there use during sexual risk, but there were some country level differences.

Compared to men in England, men living in Scotland were less likely to use poppers (OR 0.70, 95%CI 0.59-0.82), while those living in Wales or Northern Island were as likely to have used them as men living in England. Men in Scotland were also less likely to have used poppers during RAI than men in England (OR 0.81, 95%CI 0.67-0.97). However, there were no country level differences in the proportions of men using poppers during RUAI or RUAI with a potentially HIV positive partner.

Among English-resident men, any poppers use was more common among men living in London, West Midlands or the north of England (ie. the North East, North West, Yorkshire & Humber SHAs) than it was everywhere else.

Use during RAI was significantly more common among men living in London than it was among men living anywhere else in the country. Poppers use during RUAI was equally common across the country, as was their use during RUAI with a potentially HIV positive partner (except in the East of England where this act was uncommon).

• Use of poppers during sexual HIV risk is very evenly distributed across the country and is therefore a suitable candidate for national interventions.

The following table shows how poppers use varied across the demographic groups among men who had sex with a man in the last year and who had not tested HIV positive.

Men who had sex with a man in the last year, AND had not tested HIV positive (n=10221)		% use of poppers			
		Any use	During receptive AI	During receptive UAI	During receptive UAI with a potentially HIV positive partner
Age	< 20 (n=720)	47.6	23.4	13.4	4.5
	20s (n=3196)	51.6	30.6	16.3	6.2
	30s (n=2935)	53.5	35.3	17.3	7.1
	40s (n=1994)	51.0	32.5	14.3	5.9
	50+ (n=1286)	36.2	22.1	10.9	4.7
Ethnicity	White British (n=8009)	49.8	30.3	15.7	6.1
	White other (n=1320)	49.4	32.1	12.6	5.6
	Black (n=123)	56.5	35.0	18.7	6.5
	Asian (n=162)	46.0	29.4	15.3	8.6
	Mixed (n=235)	52.1	34.5	16.6	6.8
	All other groups (n=204)	48.8	33.2	15.2	7.8
Education	Low (n=1475)	49.1	29.5	17.7	6.6
	Medium (n=2212)	52.3	31.0	17.7	6.1
	High (n=6413)	49.1	31.0	14.0	5.9
Gender of sexual partners	Men and women (n=948)	42.7	25.9	12.8	6.3
	Men only (n=9177)	50.6	31.3	15.6	6.0
Regular male partner	No (n=4352)	48.5	27.4	10.6	5.7
	Yes (n=5755)	50.9	33.3	18.9	6.3
Number of male sex partners last year	One (n=2318)	29.5	15.7	11.1	1.0
	2, 3 or 4 (n=2986)	42.6	22.1	10.6	2.8
	5 to 12 (n=2516)	58.5	37.6	17.4	7.2
	13 to 29 (n=1259)	69.2	47.9	21.1	11.8
	30+ (n=1045)	71.3	51.6	26.1	17.2

The risk behaviour we are particularly interested in is the fourth measure, poppers use during URAI with a potentially HIV positive partner.

This behaviour was apparent across the age range but was most common among men in their 30s (at 7.1%). Men in their 30s were 1.62 times (OR 1.11-2.37) more likely to have used poppers during URAI with a potentially HIV positive partner, than men under 20 and 1.55 times (OR 95%CI 1.15-2.08) more likely to have done so than men over 50. However, this association was due to men in their 30s being most likely to have high numbers of sexual partners. Adjusting for numbers of sexual partners their was no association between age and using poppers during potentially sero-discordant URAI.

This behaviour was equally common across ethnic groups. However, as the behaviour was strongly associated with larger numbers of partners (see below) and since men in the White other group were more likely to have high numbers of partners (see Section 4.1 above), we might expect this group to also have a high prevalence of the risk behaviour, which they do not. In fact, adjusting for numbers of partners, men in the White other group were significantly less likely than the White British men (AOR 0.74, 95%CI 0.57-0.96) to engage in this specific risk behaviour.

Similarly, although the behaviour did vary greatly by education, adjusting for numbers of sexual partners, the men with low education were 1.27 times (AOR 95%CI 1.00-1.61) to have done so than the men with higher education.

The behaviour was no more or less common among men who had sex with men only and those who had sex with women as well as men, even after adjusting for numbers of sexual partners.

It was however, associated with having a regular male partner. After adjusting for the numbers of sexual partners, compared to men with no regular partner those with one were 1.39 times (AOR 95CI 1.17-1.65) more likely to have done this behaviour.

However, by far and away the strongest association with poppers use, use during RAI, RUAI and RUI with a potentially HIV positive partner, was with numbers of sexual partners. All the measures of poppers use showed a step-wise increase with increasing numbers of partners. Compared to men with one partner in the last year, those with 30 or more partners were 6.0 times (OR 5.96, 95%CI 5.07-6.99) more likely to have used poppers and 5.7 times (OR 5.71, 95%CI 4.84-6.73) more likely to have used them during RAI. They were 2.8 times more likely to have used them during URAI (OR 2.83, 95%CI 2.34-3.42) and were 20.8 times (OR 20.76, 95%CI 13.36-32.27) more likely to have used them during unprotected receptive anal intercourse with a potential HIV positive partner.

These data clearly suggest that men with large numbers of sexual partners have a much higher probability of HIV sero-conversion than men with fewer partners.

- **Interventions intended to reduce poppers use during sexual HIV exposure should over-serve men with higher numbers of male sexual partners.**

4.4 SUMMARY & IMPLICATIONS FOR PROGRAMME PLANNING

About a quarter of men averaged more than one new sexual partner per month, and about 1-in-8 had 30 or more sexual partners in the last year. We showed in the previous chapter how men with higher numbers of male sexual partners were more likely to be living with diagnosed HIV, and therefore that men without HIV who have high numbers of partners are much more likely to have a positive sex partner.

In this chapter we have shown that men with higher numbers of partners are also more likely to have unprotected anal intercourse and are much more likely to use poppers while doing so, thereby increasing their risk of HIV acquisition.

- **Men with higher numbers of male sexual partners and who have unmet HIV prevention needs should comprise the majority of HIV prevention clients.**

Half of respondents had used poppers in the last year and two thirds of those had used them during receptive anal intercourse. Use during unprotected intercourse was less common but still substantial.

5 HIV prevention needs

The HIV prevention needs described in *Making it Count* (Hickson *et al.* 2003b) include autonomy, control, knowledge, awareness, skills and resources. Each year the survey asks questions that try to measure the extent to which HIV prevention needs are met and allow us to look at how unmet need is distributed across the sample in terms of demographic characteristics.

The 2006 survey included one attitudinal item (see section 5.1), nine indicators of need and one item that was designed to establish what proportion of the sample would like to be involved in meeting the HIV prevention needs of other gay and bisexual men.

Three needs indicators were repeated from previous GMSS surveys. They were:

- HIV is still a very serious medical condition.
- The sex I have is always as safe as I want it to be.
- I'd expect a man with HIV to tell me he was positive before we had sex.

These three items were intended to be direct measures of appreciation of the severity of HIV infection, concern about sexual safety and unrealistic expectations about HIV disclosure. The answers we took as evidence of need were being unsure or disagreeing with the first two statements, and agreeing with the third.

The fourth and fifth measures were of social need and the sixth assessed the potential for peer education activities (a resource for social capital building):

- I'd know where to go if I wanted to make some new friends.
- I'd like more ways of meeting other gay men that don't revolve around sex.
- I would like to be more involved in promoting the health of gay and bisexual men.

The second set of needs indicators concerned knowledge about HIV transmission and the law. They might be considered five (of many) things health promoters would want gay men and bisexual men to know about sexual HIV exposure and the law. The first four of these items were presented as facts and respondents were asked if they knew them already. The answers we take as evidence of need were those men that *did not know, were unsure, or did not understand the question*. These items were:

- People with HIV have been imprisoned for passing their infection to a sexual partner.
- Laws that can be used against the sexual behaviour of people with HIV are different in different countries.
- No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).
- People with HIV have been imprisoned in the UK for passing their infection without intending to do so.

Finally all men were asked if they knew how to get expert legal advice about HIV transmission. The answers we take as evidence of need were *No* and *not sure*.

5.1 PERCEPTIONS OF HIV SEVERITY

The 2006 survey included one attitudinal item, intended to address what remains a popular but deeply flawed explanation for continuing HIV incidence. It has been suggested that knowledge of changes in HIV clinical management have reduced the perceived severity of HIV which in turn has influenced sexual behaviours. We have pointed out elsewhere (Hickson *et al.* 2001: p.45) that only if this knowledge is faulty are the holders ignorant and thus in need. Widespread notions of 'complacency' about HIV infection and 'treatment optimism' affecting sexual behaviour have been used to suggest that it is preferable for men to remain ignorant of treatment advances in case they lose their fear of HIV exposure.

Men were asked to agree or disagree with the statement *HIV is still a very serious medical condition*. This question was previously asked nationally in 1999 (Pride events and booklet) and 2001 (Pride events, booklets and internet).

Overall in 2006, 83.2% (n=10032) of men *strongly agreed* that HIV was a very serious medical condition and 14.6% *agreed* (n=1762). This makes 97.8% who agreed with the statement. Another 1.3% (n=155) were *not sure* whether HIV remained a very serious medical condition. Overall, 0.8% of men (103/12052) did not agree, including 0.2% (29 of 12052) who *disagreed strongly*. As in previous years there is almost universal agreement among gay men in the UK that HIV remains an undesirable infection. Also, disagreement with the statement (while still uncommon) remains more common among men with diagnosed HIV (3.1%), than men tested negative (0.6%) and men who had never tested for HIV (0.7%).

We found no evidence that the overall proportion of men who disagreed with the statement that *HIV is still a very serious medical condition* changed between 1999 and 2006. Complacency about HIV, and men not being bothered whether or not they pick up or pass on HIV, are poor explanations for continuing HIV risk behaviours.

5.2 INDICATORS OF UNMET HIV PREVENTION NEED

5.2.1 *Need to be as safe as I want it to be*

Men were asked to agree or disagree with the statement *The sex I have is always as safe as I want it to be*. Any disagreement was taken as indicating HIV prevention need, because the respondent had identified a level of sexual safety that was personally unsatisfactory. The question does not indicate what precisely could be changed – for example the respondent could not be as safe as they want to be because they want to not have sex with strangers but find themselves often doing so, or they are often drunk when having sex, or they find condoms often fail when they use them.

Overall in 2006, more than half (53.0%) of all men *strongly agreed* that the sex they had was always as safe as they wanted it to be, and another third (31.7%) *agreed*, so 84.7% of all men agreed overall. Of the remainder, 8.1% were unsure, 6.2% disagreed and 1.0% strongly disagreed. So if we take disagreement as indicating need, 7.2% self-identified their own sexual behaviour as less safe than they would like it to be.

This question had previously been asked in 1999 (Pride events and booklet) and 2004 (booklets and internet). We found no evidence that the overall proportion of men who say the sex they have is not as safe as they want it to be changed between 1999 and 2006.

5.2.2 Need to not expect positive partners to disclose before sex

One aim of *Making it Count* is that men are aware of the possible HIV-related consequences of their sexual actions. Expecting to be told that a person you are about to have sex with has HIV is a problem both because around a third of people with HIV do not know they have it and because many people who do know they have HIV will not tell sexual partners before sex. Expecting people with HIV to disclose their status before sex can result in a perception that if one is not told this then the partner does not have HIV. This can clearly lead to misjudgements of sexual risk. In GMSS 1999, 2001, 2002 and again in 2006 men were asked to indicate on a five-point scale whether they agreed or disagreed with the statement, *I'd expect a man with HIV to tell me he was positive before we had sex*. Any agreement was taken as an indicator of HIV prevention need.

In 2006, 58.1% of all men *strongly agreed* and a further 16.2% *agreed*. So three quarters (74.3%) of all men expected HIV positive disclosure from potential sex partners. Of the remainder, 11.7% were unsure, 9.4% *disagreed* and 4.7% *strongly disagreed*. Agreement with the statement was higher among the web-recruited men (75.6% agreed) than the booklet recruited men (71.2% agreed). This difference persisted when adjusted for demographic differences in the two recruitment methods.

The following tables show the proportion of men agreeing with the statement in four different survey years. The first table includes only men living in England and Wales recruited using the booklet, so consists of men in touch with health promotion services.

<i>I'd expect a man with HIV to tell them he was positive prior to having sex.</i>	BOOKLET samples only (England and Wales residents)			
	1999	2001	2002	2006
number agreeing / total number	1741/2658	1562/2445	2119/3354	2709/3804
% agreeing	65.5	63.9	63.2	71.2
95% Confidence Interval	63.7-67.3	62.0-65.8	61.6-64.8	69.8-76.3
missing (% of base)	52 (1.9)	67 (2.7)	103 (3.0)	79 (2.0)

Among booklet-recruited respondents, we found no evidence that the proportion agreeing varied from 1999 to 2001 to 2002. However, in 2006 there was a significant increase in the proportion agreeing. One explanation for this change is an increase in criminal prosecutions of people with HIV who passed their infection to a sexual partner whom they had not told they had HIV. It is possible that media coverage of these cases has resulted in more men expecting the law to protect them from HIV, and now being more likely to expect positive partners to disclose before sex. If this is the case, then this is evidence of a negative impact of criminal prosecutions on public health objectives. Relying on positive partners disclosing their infection status (rather than using condoms except when certain of sero-concordancy) is a dangerous tactic when a third of men with HIV cannot tell their partner of their infection because they have not had it diagnosed. However, the internet sample shows a different pattern as seen in the following table.

<i>I'd expect a man with HIV to tell them he was positive prior to having sex.</i>	INTERNET samples only (UK residents)		
	2001	2002	2006
number agreeing / total number	3500 / 4619	5480 / 7483	6257 / 8259
% agreeing	75.8	73.2	75.6
95% Confidence Interval	74.6-77.0	72.2-74.2	74.7-76.5
missing (% of base)	151 (3.2)	47 (0.6)	141 (1.7)

Here the proportion agreeing significantly dipped between 2001 and 2002 but then rose again to its former level in 2006. This data suggests no change in the proportion expecting disclosure.

5.2.3 Needs and assets for social infrastructure interventions

Many of gay and bisexual men’s HIV prevention needs can be and are met by members of their social networks. Gay and bisexual men therefore form one of the largest resources that can be brought to bear on minimising new HIV infections. GMSS has previously asked direct indicators of social need (such as agreement with *I sometimes feel lonely*). In the 2006 survey we asked three items that are taken as indicators of need for social infrastructure – places, groups and networks where men can meet to form social relationships and contribute to each other’s health and well-being.

The indicators took the form of agreement or disagreement with the following three statements:

- *I'd know where to go if I wanted to make some new friends.*
- *I'd like more ways of meeting other gay men that don't revolve around sex.*
- *I would like to be more involved in promoting the health of gay and bisexual men.*

Disagreement with the first statement is taken as need for social structures and meeting places where gay men can go to form new friendships. Agreement with the second statement is taken as an indicator of need for gay meeting places and networks that do not presuppose a sexual purpose. Agreement with the third statement is taken as evidence of the size of the potential resource gay and bisexual men represent, as well as evidence of need for volunteering opportunities and community involvement projects. The following table shows the proportion of all men giving each response to the three statements.

All men	<i>I'd know where to go if I wanted to make some new friends.</i> (n=11931, missing 224)	<i>I'd like more ways of meeting other gay men that don't revolve around sex.</i> (n=11919, missing 236)	<i>I would like to be more involved in promoting the health of gay and bisexual men.</i> (n=11891, missing 264)
Strongly agree	27.1	37.6	18.3
Agree	42.3	41.2	31.3
Neither	19.2	13.4	35.9
Disagree	8.8	6.1	11.9
Strongly disagree	2.6	1.7	2.6

Overall, 11.4% of men said they did not know where to make new friends, 78.8% said they would like non-sexual places to meet other gay men and 49.6% said they would like to be more involved in promoting the health of gay and bisexual men.

These latter two measures show a very large potential for community projects which combine opportunities for men to meet each other in non-sexual environments and for projects where community members are mobilised to meet each others health needs.

5.2.4 Need for knowledge about HIV transmission and the law

HIV health promotion aims for people to be educated and informed about HIV and its prevention. The survey tried to establish how well informed respondents were about the criminalisation of sexual transmission of HIV. We established four key facts about HIV transmission and the law which our health promotion collaborators wanted gay and bisexual men to know in order for them to make informed choices about sexual risk behaviours.

Men were asked to indicate whether or not they knew these facts already. Although this method of measurement probably under-estimates unmet need and gives a more optimistic picture than is the case, we choose it because it increases the educational value of the survey.

Men were told *All of the following statements are true* and asked *Did you know this already?* Responses were: *I knew this, I didn't know this, I wasn't sure, I don't understand this*. The four statements and the proportion of all respondents indicating each of the four answers are given in the table below.

All of the following statements are TRUE. Did you know this already?	% Knew this	% Didn't know	% Wasn't sure	% Don't understand
Some people with HIV have been imprisoned in the UK for passing their infection to a sexual partner. (n=11988, missing 167)	76.8	15.2	7.4	0.6
Laws that can be used against the sexual behaviour of people with HIV are different in different countries. (n=11992, missing 163)	60.7	22.9	13.6	2.8
No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur). (n=11909, missing 246)	22.2	49.9	21.0	6.9
People with HIV have been imprisoned in the UK for passing their infection without intending to do so. (n=11959, missing 196)	21.3	63.9	12.9	1.8

The survey found varying levels of knowledge on these items.

Less than a quarter (22.2%) of men were aware that no person with HIV had been imprisoned in the UK for exposing his partner to HIV during sex when no HIV transmission occurred. Similarly, less than a quarter (21.3%) knew that people with HIV had been imprisoned in the UK for passing their infection without intending to do so. In comparison, most men (76.8%) knew that some people with HIV had been imprisoned in the UK for passing their HIV infection to a sexual partner. The relationship between all these items and the demographic variables are outlined in section 5.3.

All men were also asked *Would you know how to get expert legal advice about HIV transmission if you needed it?* Men were allowed to respond, *yes, no, and other*. All men who answered *other* were asked to record what they meant. More than half (55.2%) of men said *No* and less than half (44.5%) answered *Yes*. Of the 47 men (0.4%) that gave an *other* answer, almost half did not specify what they meant. Most of the remainder described how they would find out.

5.3 VARIATION IN NEED ACROSS 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 (ie. high levels of need) compared with others.

5.3.0 HIV testing history and unmet prevention needs

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

All men [- knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by HIV testing history group		
	Never tested (n=4434)	Last test negative (n=6406)	Last test positive (n=928)
DISAGREE: HIV is still a very serious medical condition	0.7	0.6	3.1
DISAGREE: The sex I have is always as safe as I want it to be.	5.4	7.8	11.3
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	85.3	72.5	33.8
DISAGREE: I'd know where to go if I wanted to make some new friends.	11.4	10.6	16.3
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	79.0	79.8	71.0
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	46.3	51.8	49.4
• People with HIV have been imprisoned for passing their infection to a sexual partner.	27.8	21.7	12.3
• Laws that can be used against the sexual behaviour of people with HIV are different in different countries.	48.8	35.3	23.1
• No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).	82.5	76.2	67.1
• People with HIV have been imprisoned in the UK for passing their infection without intending to do so.	80.9	79.4	63.7
Would NOT know how to get expert legal advice about HIV transmission.	61.6	52.3	50.1

Different needs show different profiles by HIV testing history and proximity to the HIV epidemic. As we have reported previously, knowledge is lower among men who have never tested for HIV. Men who have never tested were also most likely to hold naive beliefs about the likelihood of positive disclosure prior to sex. Men with diagnosed HIV were most likely to report the sex they had was not always as safe as they wanted it to be.

- HIV prevention programmes should aim for a diverse portfolio of interventions that are encountered by men with a wide variety of testing histories.

5.3.1 Age and unmet prevention needs

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

All men [• knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by age group				
	under 20 (n=851)	20s (n=3516)	30s (n=3421)	40s (n=2477)	50+ (n=1546)
DISAGREE: HIV is still a very serious medical condition.	0.9	1.0	0.9	0.9	0.4
DISAGREE: The sex I have is always as safe as I want it to be.	6.6	8.6	7.3	6.9	<u>4.5</u>
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	91.2	80.8	<u>66.9</u>	<u>66.4</u>	78.8
DISAGREE: I'd know where to go if I wanted to make some new friends.	9.8	11.6	11.4	11.8	11.1
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	80.6	81.6	78.1	77.4	<u>75.1</u>
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	59.3	52.7	47.1	47.4	<u>45.8</u>
• <i>People with HIV have been imprisoned for passing their infection to a sexual partner.</i>	38.0	27.9	21.1	<u>18.2</u>	<u>17.2</u>
• <i>Laws that can be used against the sexual behaviour of people with HIV are different in different countries.</i>	63.6	47.5	36.8	<u>29.6</u>	<u>29.1</u>
• <i>No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).</i>	78.5	77.5	77.0	77.4	81.2
• <i>People with HIV have been imprisoned in the UK for passing their infection without intending to do so.</i>	83.9	80.0	78.4	<u>76.8</u>	<u>77.0</u>
Would NOT know how to get expert legal advice about HIV transmission.	64.2	62.0	54.9	50.8	<u>45.1</u>

All indicators show the greatest unmet need among younger men. Men under 20 were most likely to hold naive beliefs about the likelihood of HIV positive disclosure prior to sex, and were more likely to report knowledge deficits. Men in their twenties were also most likely to report the *sex they had was not always as safe as they wanted it to be*.

- HIV prevention programmes should aim to increase their contribution to meeting younger gay men's sexual health needs, especially those under twenty.

5.3.2 Ethnicity and unmet prevention needs

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

All men [• knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by ethnic group					
	White British (n=9383)	White other (n=1540)	Black (n=155)	Asian (n=187)	Mixed (n=275)	Other (n=251)
DISAGREE: HIV is still a very serious medical condition.	0.7	1.3	2.5	1.0	0.7	2.3
DISAGREE: The sex I have is always as safe as I want it to be.	6.9	8.6	9.3	7.9	8.0	6.5
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	76.0	65.3	65.6	77.8	75.3	69.4
DISAGREE: I'd know where to go if I wanted to make some new friends.	10.7	14.2	19.1	16.0	10.5	13.4
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	78.5	78.1	83.3	78.6	84.8	85.4
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	48.1	49.7	72.3	60.4	60.6	66.9
• People with HIV have been imprisoned for passing their infection to a sexual partner.	21.2	30.3	20.3	30.7	27.0	39.5
• Laws that can be used against the sexual behaviour of people with HIV are different in different countries.	39.9	32.8	46.5	47.1	41.8	43.0
• No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).	78.3	76.0	73.5	78.6	76.3	78.4
• People with HIV have been imprisoned in the UK for passing their infection without intending to do so.	78.4	81.2	73.6	75.7	80.4	81.3
Would NOT know how to get expert legal advice about HIV transmission.	56.4	50.4	55.1	67.4	53.9	55.3

No single ethnic group emerges as being in greater need across all indicators. However, Asian men and Black men showed greater unmet need than other ethnic groups.

- HIV prevention programmes concerned with equity of HIV prevention needs should prioritise Asian and Black men.

5.3.3 Education and unmet prevention needs

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

All men [• knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by education group		
	LOW (n=1820)	MEDIUM (n=2610)	HIGH (n=7421)
DISAGREE: HIV is still a very serious medical condition	0.6	0.9	0.9
DISAGREE: The sex I have is always as safe as I want it to be.	6.1	6.9	7.6
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	82.0	78.8	<u>70.7</u>
DISAGREE: I'd know where to go if I wanted to make some new friends.	11.3	10.2	11.9
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	78.3	78.9	78.9
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	51.0	48.1	51.1
• People with HIV have been imprisoned for passing their infection to a sexual partner.	25.8	25.5	<u>21.8</u>
• Laws that can be used against the sexual behaviour of people with HIV are different in different countries.	49.2	47.4	<u>34.0</u>
• No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).	81.8	79.1	<u>76.4</u>
• People with HIV have been imprisoned in the UK for passing their infection without intending to do so.	77.9	79.7	78.5
Would NOT know how to get expert legal advice about HIV transmission.	<u>54.7</u>	58.7	<u>54.7</u>

Across most indicators men with lower levels of formal education were in greater need than men with higher levels of education. These data confirm the recommendation from previous years that:

- HIV prevention programmes should aim to over-serve men with lower levels of formal education, focussing on those who did not continue education to university level.

5.3.4 Gender of sexual partners and unmet prevention needs

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

All men [* knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by gender of partners group			
	No partners (n=625)	Women only (n=85)	Women and men (n=984)	Men only (n=10188)
DISAGREE: HIV is still a very serious medical condition	0.9	1.1	1.5	0.8
DISAGREE: The sex I have is always as safe as I want it to be.	3.5	5.7	7.7	7.4
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	86.6	89.8	83.3	<u>72.5</u>
DISAGREE: I'd know where to go if I wanted to make some new friends.	20.5	11.6	<u>10.8</u>	10.9
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	85.9	63.5	<u>59.5</u>	80.3
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	49.9	<u>41.2</u>	42.2	50.3
• People with HIV have been imprisoned for passing their infection to a sexual partner.	30.2	<u>20.9</u>	25.5	22.6
• Laws that can be used against the sexual behaviour of people with HIV are different in different countries.	45.0	62.1	45.5	<u>38.2</u>
• No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).	80.2	80.2	79.8	77.5
• People with HIV have been imprisoned in the UK for passing their infection without intending to do so.	79.2	75.6	77.1	78.8
Would NOT know how to get expert legal advice about HIV transmission.	57.1	58.6	57.2	55.2

While behaviourally bisexual men were most likely to report *the sex they had was not always as safe as they wanted it to be*, it was the men who had no sex in the last year, or sex with women only (but were either gay or bisexual) who were most in need on most measures.

5.3.5 Current relationship with a man and unmet prevention needs

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

All men [* knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by relationship group	
	NO relationship with a man (n=5390)	Current relationship with a man (n=6478)
DISAGREE: HIV is still a very serious medical condition	0.6	1.1
DISAGREE: The sex I have is always as safe as I want it to be.	8.0	6.5
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	76.6	72.4
DISAGREE: I'd know where to go if I wanted to make some new friends.	13.7	9.5
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	80.1	77.7
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	48.6	50.4
• <i>People with HIV have been imprisoned for passing their infection to a sexual partner.</i>	24.2	22.4
• <i>Laws that can be used against the sexual behaviour of people with HIV are different in different countries.</i>	41.5	37.6
• <i>No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).</i>	78.6	77.2
• <i>People with HIV have been imprisoned in the UK for passing their infection without intending to do so.</i>	79.4	78.0
Would NOT know how to get expert legal advice about HIV transmission.	57.8	53.7

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. These findings are consistent with those reported previously (Reid *et al.* 2004).

5.3.6 Number of male sexual partners and unmet prevention needs

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 represented in 5.3.4 above).

All men who had male partners last year [* knowledge items show proportion who did not know, were unsure, or did not understand the question]	% by number of male partners last year				
	One (n=2424)	2, 3, 4 (n=3132)	5-12 (n=2724)	13-29 (n=1444)	30+ (n=1318)
DISAGREE: HIV is still a very serious medical condition.	0.4	0.5	0.8	0.7	2.3
DISAGREE: The sex I have is always as safe as I want it to be.	2.5	5.8	8.6	10.9	14.7
AGREE: I'd expect a man with HIV to tell me he was positive before we had sex.	82.8	81.3	72.2	63.1	50.5
DISAGREE: I'd know where to go if I wanted to make some new friends.	10.9	11.0	10.3	10.4	12.4
AGREE: I'd like more ways of meeting other gay men that don't revolve around sex.	82.5	81.9	78.3	74.2	68.3
AGREE: I would like to be more involved in promoting the health of gay and bisexual men.	49.0	51.2	49.3	49.4	47.2
• People with HIV have been imprisoned for passing their infection to a sexual partner.	23.1	24.0	21.6	20.8	22.9
• Laws that can be used against the sexual behaviour of people with HIV are different in different countries.	39.4	43.6	37.3	36.0	32.3
• No one has been imprisoned in the UK simply for exposing someone else to HIV during sex (where infection did not occur).	78.3	80.5	78.1	75.6	71.5
• People with HIV have been imprisoned in the UK for passing their infection without intending to do so.	78.3	80.1	80.8	76.0	75.4
Would NOT know how to get expert legal advice about HIV transmission.	54.3	57.3	55.9	54.9	53.2

Different HIV prevention needs show different patterns by the number of male partners men have. Men who have higher numbers of partners are more likely to be involved in sexual HIV exposure than those with fewer partners. However, they were less likely to be ignorant about HIV transmission and prevention. On most knowledge and awareness items men with fewer sexual partners show more need. Conversely, men with higher numbers of partners were most likely to report concern that the sex they had was not always as safe as they wanted.

- These data suggest that HIV prevention programmes should include interventions which are encountered by men who are diverse in terms of their number of male partners, and the differential needs of both the sexually inactive and the highly sexually active should be attended to.

5.4 SUMMARY & IMPLICATIONS FOR PROGRAMME PLANNING

These implications for programme planning should be read in conjunction with those at the end of Chapter 4, with our complementary reports from GMSS from 1997 to 2005 and *Making it Count* (Hickson *et al.* 2003b). They are intended to suggest where HIV prevention programmes might have the greatest impact on achieving equity of HIV health promotion aims.

5.4.1 *Aims poorly met for many men*

Some of the needs explored in this survey were poorly met for only a minority of men, sometimes further focussed within particular sub-groups. Several knowledge items show extensive ignorance.

Three quarters (74.3%) of all men expected HIV positive disclosure prior to sex from a man with HIV. This need was common among almost all sub-groups, and was especially common among men under 20 (91.2%) and men that had never tested for HIV (85.3%). In terms of HIV exposure and transmission it is also worth noting that more than half (57.8%) of negative and untested men with 30 or more partners in the last year expected HIV positive disclosure prior to sex from a man with HIV. This area of knowledge is certainly suitable for interventions encountered by the general population of gay men, bisexual men and other men that have sex with men.

In addition, awareness and knowledge of the detail of criminal prosecution for sexual transmission of HIV was low in most groups. Given that need is so extensive in this area, it could be an appropriate area for knowledge-based interventions.










In addition, 78.8% said they would like non-sexual places to meet other gay men and 49.6% said they would like to be more involved in promoting the health of gay and bisexual men. These findings confirm the need of infrastructure interventions, and the possibility that gay and bisexual men themselves represent an asset for HIV prevention that is under-utilised.

5.4.2 *Groups for whom many aims are poorly met*

Two characteristics show consistent bias across a wide range of indicators of need. Younger men are almost always in more need than older men, and men with less formal education are usually in more need than men with higher levels of formal education.

All interventions should aspire to over-serve younger rather than older men, and less well educated men.


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