State of Play:

findings from the England Gay Men's Sex Survey 2014

Ford Hickson
David Reid
Gary Hammond
Peter Weatherburn

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE
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TABLE OF CONTENTS

SUMMARY

This report outlines the main findings of Vital Statistics 2014 – our seventeenth *Gay Men's Sex Survey* (GMSS). The survey is community-recruited and is concerned with HIV and STI infections, sex between men, HIV prevention needs and service uptake.

Chapter 1 describes the way in which we undertook the survey. The survey was design in collaboration with health promotion agencies, as was recruitment which occurred from July to October 2014, primarily through web-based community services. A total of 15,360 qualifying surveys were submitted.

Chapter 2 describes the demographic profile of the respondents: they lived all across England; they were aged 16 to 90 years, half were under 33 years; 82% were White British, 11% other white and 7% from visible ethnic minorities; 15% were born outside the UK; 18% left school at 16 years of age, while 48% had a university degree; 85% identified as gay and 10% as bisexual; 44% were currently in a steady relationship with a man.

Chapter 3 outlines the extent of two sexual morbidities: sexual unhappiness and HIV infection. The proportion of men not happy with their sex lives, 41%, was similar in all parts of the country. The over 65s were most likely to be happy with their sex life. Overall, 9% were living with diagnosed HIV infection and the annual incidence of new HIV diagnoses was 1.1%, among whom 26% indicated they had a CD4 count below 350 cells/μl at diagnosis. Among men with diagnosed HIV, 81% were on anti-HIV treatment, and 92% of those indicated their last viral load test result was undetectable.

Chapter 4 describes a number of risk and precaution behaviours related to sex and drugs. The most common risk reduction tactics among men with diagnosed HIV were using lubricant for anal sex (73%), monitoring viral load (72%) and regular STI screenings (69%). Among men without diagnosed HIV they were using lubricant for anal sex (77%), avoiding sex with men they thought had HIV (63%) and declining some sex partners (56%). Other notable findings were: 61% of men indicated they had anal sex without a condom in the last 12 months; 14% had anal sex without condoms with both steady and non-steady partners in the last 12 months; 7% had ever taken PEP.

Drugs and alcohol play a part in HIV acquisition: 42% of men with diagnosed HIV felt that alcohol or drugs had contributed to their acquiring HIV, with drugs now being as commonly implicated as alcohol. Overall, 52% of all respondents had used illicit drugs in the last 12 months, most commonly cannabis (26%), cocaine (17%) and ecstasy (15%); fewer than 2% had injected illicit drugs in the last 12 months.

Chapter 5 explores HIV prevention opportunities, capabilities and motivations using a range of indicators about unmet prevention need.

HIV-test-related ignorance was low, although 50% did not know that 'Doctors in the UK recommend that all men who have sex with men test for HIV at least once a year'. HIV-transmission-related ignorance was more common: 19% did not know that HIV cannot be passed through deep kissing; 26% did not know that effective HIV treatment reduces infectivity; and 41% did not know that other STIs facilitate HIV transmission.

PEP-related ignorance was higher: 37% had never heard of PEP (although this is significantly lower than in previous surveys).

A small proportion of men (2.8%) had been forced or tricked into taking an HIV test when they did not want one.

Lack of self-efficacy for service access was very low: 6% were not confident they could access an HIV test and 2% were not confident they could access STI testing. 20% had wanted a condom but not had access to one in the last 12 months and 14% had had condomless anal sex just because they did not have a condom.

Chapter 6 reports data about the performance of HIV prevention interventions. Collective annual STI screening reached 52% of men (9% with symptoms, 43% without symptoms); and collective annual HIV testing reached 55%. Hospitals and sexual health clinics serve the largest share of the HIV tester market. Satisfaction with HIV testing services is generally high, with a notable exception in counselling for men diagnosed with HIV, where 29% were dissatisfied with the service they received.

1. INTRODUCTION AND METHODS

1.1 BACKGROUND

This report contains findings from *The Gay Men's Sex Survey 2014* (GMSS14), the seventeenth sexual health needs assessment for gay men, bisexual men and other men who have sex with men, carried out by Sigma Research in collaboration with sexual health promoters in the UK. The findings build on the existing picture of need among this population, built up over a number of years.

GMSS 2014 was an English-language, cross-sectional, self-completion online survey among men (aged 16 years and over) living in England who are sexually attracted to men. Men were recruited online, through multiple channels.

England has a well-established surveillance systems for behavioural as well as biological HIV surveillance among gay and bisexual men. GMSS14 aims to compliment other data collection systems by focussing on a range of precautionary tactics, unmet prevention needs, men's use of settings, and intervention performance.

1.2 DEVELOPMENT

The 2014 survey was commissioned by Terrence Higgins Trust from Sigma Research at the London School of Hygiene & Tropical Medicine. It was designed in collaboration with health promotion partners. On 16th May 2014 a draft survey was sent to 28 named stakeholders involved in commissioning, providing or researching HIV prevention with gay and bisexual men, asking for comments, additions and potential deletions. Seven agencies input to the design (some with multiple persons contributing) by the deadline of 2nd June. All comments and suggestions were responded to and an account of the outcomes of each suggestion or comment was sent to these agencies on 1st July 2014.

1.3 RECRUITMENT

The survey was open for three months from the end of July 2014 to the end of October 2014. There were 17,287 surveys submitted. To be included in the analysis participants should identify as a man (including transmen), be aged 16 or over, be resident in England and indicate a sexual attraction to one or more men.

Of these 17,287, submitted surveys 1,583 (9.2%) were excluded because they were not reported as living in England, 113 (0.7%) did not identify themselves as being a man or a transman, 102 (0.6%) did not give age information or were under 16 and 276 (1.6%) did not provide any information that they are attracted to men.

A total of 1,927(11.1%) were excluded (some were excluded on more than one of these criteria).

The final sample consisted of 15,360 men. They were recruited through a variety of sources: 43.9% through online gay hook-up/dating apps and websites; 31.7% through Terrence Higgins Trust's *It Starts with Me* Facebook page; 9.3% through other THT online channels and other gay community organisations; 7.4% through ads on Facebook; and 7.6% through other routes (including Twitter, invitations by existing respondents and going directly to the survey site whose URL address was widely promoted).

2. DESCRIPTION OF THE MEN WHO TOOK PART

This chapter describes the men who took part in the survey using the following characteristics: region of residence; ethnic group; country of birth; highest educational qualification; sexual attraction; sexual identity; relationship status and age. The following table describes the overall sample and the men recruited through different sources.

Demographic characteristics		Total sample (%)	By recruitment source				
			Hook-up sites (%)	Facebook adverts (%)	THT's It Starts with Me Facebook page (%)	Other community educators (%)	Other sources (%)
Sample size (N)		15,360	6,749	1,134	4,873	1,432	1,172
PHE region of residence	North (n=3,896)	26.0	23.6	30.5	29.4	26.7	20.7
	Midlands & East (n=3,472)	23.2	23.6	30.3	23.0	21.8	16.5
	London (n=3,951)	26.4	28.1	14.0	22.7	30.3	38.5
	South (n=3,667)	24.5	24.7	25.2	25.0	21.2	24.3
Ethnic group	White British (n=12,507)	81.5	76.6	89.8	85.6	84.9	81.2
	White other (n=1,727)	11.3	13.6	6.4	9.2	9.5	13.0
	Asian & Asian/White (n=533)	3.5	5.0	1.4	2.2	2.7	2.8
	Black & Black/White (n=318)	2.1	2.6	1.2	1.7	1.8	1.7
	Other (n=254)	1.7	2.2	1.1	1.2	1.0	1.3
Born in the UK (n=12,818)		85.1	80.8	92.1	88.5	88.4	84.9
Education	Low (n=2,702)	17.9	18.8	27.2	17.5	13.0	12.3
	Medium (n=5,079)	33.7	30.4	40.9	38.7	30.8	28.6
	High (n=7,276)	48.3	50.8	31.9	43.7	56.3	59.1
Are you sexually attracted to men?	Only to one man (n=1,021)	6.6	4.1	13.0	9.2	6.3	5.3
	To several men (n=2,863)	18.6	22.7	13.2	16.0	17.4	13.1
	To many men (n=11,476)	74.7	73.3	73.8	74.8	76.3	81.6
Which of the following terms best describes how you think about yourself	Gay or homosexual (n=12,917)	85.0	78.7	94.2	90.2	87.5	88.2
	Bisexual (n=1,476)	9.7	15.2	2.2	5.8	7.1	5.2
	Straight or heterosexual (n=30)	0.2	0.3	0.0	0.1	0.3	0.1
	Queer (n=214)	1.4	1.1	1.3	1.2	1.8	3.7
	Any other term (n=54)	0.4	0.5	0.2	0.3	0.1	0.3
	I don't usually use a term (n=499)	3.3	4.2	2.1	2.5	3.2	2.5
Currently in a steady relationship with a man/men (n=15,346)		44.3	33.8	56.0	53.2	50.8	48.8
Age	Mean	34.9	40.0	28.7	29.7	33.8	34.7
	Standard deviation	13.1	13.8	11.1	10.2	12.0	11.8
	Median	32	39	26	27	31	33
	Range	16-90	16-84	16-90	16-84	16-84	16-74

2.1 RESIDENCE

The distribution of the total population of England across the four PHE regions is 28.2% in the North, 30.2% in the Midlands and East, 15.4% in London and 26.1% in the South. Compared to the total population, the sample overall is more likely to live in London (26.4% vs. 15.4%) and less likely to live in the other three regions, particularly the Midlands and East of England (23.2% vs. 30.2%).

The different sources recruited men in the four regions in different proportions. Hook-up sites were relatively stronger in London and weaker in the North; FB ads were stronger in the North and Midlands & East, and were weaker in London; ISWM was also stronger in the North and weaker in London; while educators were more similar to the entire sample overall.

2.2 ETHNICITY

The survey asked men to nominate one of 17 ethnic groups which have been collapsed to five groups: White British; White other (Irish, Gypsy or Irish Traveller, other White background); Asian or Asian/White (Indian, Pakistani, Bangladeshi, Chinese, other Asian background, mixed/multiple White and Asian): Black and Black/White (African, Caribbean, other Black background, mixed/multiple White and Black Caribbean, mixed/multiple White and Black African); Other (Arab, any other mixed/multiple background, any other ethnic group).

The majority of respondents (81.5%) were white British with the second largest group being other white backgrounds (11.3%). The remaining 7.2% of men from visible ethnic minorities were disproportionately recruited on hook-up sites compared with the white men.

2.3 COUNTRY OF BIRTH

Although the majority of men (85.1%) were born in the UK, a further 120 countries of birth were listed by participants. After the UK, the ten most common countries of birth were Republic of Ireland; Australia; Germany; USA; South Africa; Poland; Italy; France; Spain; Portugal.

This proportion of participants born in the UK was lowest for hook-up sites and highest for Facebook ads.

2.4 EDUCATION

Men were asked their highest education qualification and allocated to one of three groups: high (university degree or higher); medium (post-16 qualifications but no university degree); or low (no post-16 qualifications). Men recruited through 'other' sources and those recruited by community educators had higher education qualifications while those recruited through Facebook ads were least qualified. This was the case among both those below 25 years and those 25 years and older.

2.5 SEXUALITY

With regard to sexual attraction to men, the majority of men from all sources indicated they were attracted to many men (rather than one or several). However, Facebook ads (and to a lesser extent ISWM) recruited proportionately more men who were sexually attracted to only one man, while hook-up sites recruited proportionately more men who were attracted to several (rather than many) men.

The majority of men (85.0%) identified themselves as gay, but this proportion was lower for men recruited on hook-up sites with a corresponding increase in the proportion who identified as bisexual. Far smaller proportions identified as straight, queer, any other term or no term.

Fewer than half the men (44.3%) were currently in a steady relationship with a man (or more than one man). This proportion was highest among those recruited through Facebook ads (56.0%) and lowest among those recruited through hook-up sites (33.8%).

2.6 AGE

Men participating were 34.9 years old on average (standard deviation 13.1). Of the 15,360 men taking part in GMSS 2014 more than half (56.5%) were under 35, including a quarter (27.1%, n=4155) who were aged 16-24; and more than a quarter (29.4%, n=4515) who were aged 25-34. Of the remainder, 19.1% (n=2936) were aged 35-44; 15.2% (n=2339) were aged 45-54 and 9.2% (n=1415) were aged 55+.

All five sources recruited a wide age range but the average age varied markedly by source, with median ages of 26 years from Facebook ads and 39 years from hook-up sites.

3. MORBIDITIES: SEXUAL UNHAPPINESS AND SEXUALLY ACQUIRED INFECTIONS

In this chapter we consider the extent in the sample of two types of sexual morbidities: sexual unhappiness and sexually transmitted infections. The latter include both HIV and other infections, and with regard to HIV we consider both the presence of infections, recent diagnoses, the extent of late stage diagnoses, and the extent of viral suppression.

3.1 SEXUAL UNHAPPINESS

Men were asked *Are you happy with your sex life?* They were offered the response options 'no' or 'yes' only. Overall, 40.5% (N=14772, missing 588) indicated 'no', they are not happy with their sex life.

The proportion not happy with their sex life was identical in the four PHE regions. Men who were happy with their sex life (mean age 35.3 years, standard deviation 12.7, median 33) were marginally older than those who were not happy (mean 34.6, standard deviation 13.2, median 31). Across the age range the proportion not happy showed an S-curve: starting at 40% of teenagers, dropping slightly to 37% in the early 20s before rising steadily to a peak of 46% in the late 40s and dropping again with increasing age. The over 65s were most likely to be happy with their sex life. Men living with diagnosed HIV were no more or less likely to be unhappy with their sex life than men who had not tested HIV positive.

3.2 PREVALENCE AND INCIDENCE OF DIAGNOSED HIV INFECTION

The estimated prevalence of HIV in the total UK population is 0.19% (amongst people aged 15 and over) or 0.23% (amongst those aged 15-44). Among men who have sex with men it is estimated at 4.9% overall, which includes 9.0% in London, and 3.6% in the rest of England and Wales (among those aged 15-44). The HPA also estimate that nationally 86% of these infections have been diagnosed, so the prevalence of diagnosed infection among gay and bisexual men is approximately 4.2% overall, which includes 7.5% in London and 3.0% in the rest of England and Wales (Skingsley et al., 2015).

Since this was an internet survey, the only source of evidence for the presence of infections was men's self-reports of their diagnoses. Overall in this survey 9.0% (of N=15360, missing 66) indicated they had diagnosed HIV infection.

156 men indicated they had been diagnosed with HIV in the past 12 months. Excluding those men who had been diagnosed with HIV for over 12 months, this gave an annual incidence of HIV diagnosis of 1.1%.

3.3 LATE HIV DIAGNOSES: CD4 COUNT AT DIAGNOSIS

HIV infection can be managed with drugs if it is treated early enough. Therefore, if people acquire HIV, the sooner that infection is diagnosed the better their prognosis. The majority of deaths from HIV in the UK occur because people are diagnosed too late, and have had their infection for too long, for treatments to be effective.

CD4 is a protein on the surface of some white blood cells, called CD4 Helper Cells or T-cells, which provide an entry point to the cell for HIV, and which are depleted as HIV infection worsens. A lower CD4 cells count therefore indicates a longer standing infection. In 2014 an estimated 40% of the people diagnosed with HIV in the UK had a CD4 count below 350 cell/mm3, which defines a late diagnosis. In GMSS, men who had been diagnosed with HIV within the preceding 10 years were asked *When you were first diagnosed with HIV, what was your CD4 count?* They were offered the options in the table below.

Of the 1370 men who said they were living with diagnosed HIV infection, 1361 told us which year they had first been diagnosed in (missing 9, or 0.7%). Overall, 11.4% of men with diagnosed HIV said they had been diagnosed in the preceding 12 months and 64.7% had been diagnosed in the preceding 10 years (2005 onwards). The table shows CD4 counts at diagnosis for all men with diagnosed HIV in the last 10 years and for those diagnosed in the last 12 months.

When you were first diagnosed with HIV, what was your CD4 count? (n=875, missing 11)	Diagnosed with HIV in the last 10 years (n=875, missing 11)		Diagnosed with HIV in the last 12 months (n=155, missing 1)	
	Number	%	Number	%
Less than 200 cells/μl	134	15.3	21	13.5
200-349 cells/μl	144	16.5	20	12.9
350-500 cells/μl	186	21.3	42	27.1
More than 500 cells/μl	313	35.8	55	35.5
I don't remember / I don't know	98	11.2	17	11.0

Among men diagnosed with HIV in the last 12 months, 26.4% indicated they had a CD4 count below 350 cells/μl at diagnosis compared with a national figure of 29.0% for gay and bisexual men in 2014 (Skingsley et al. 2015).

3.4 UNSUPPRESSED DIAGNOSED HIV

The aim of anti-retroviral therapy is to suppress the virus so that it is undetectable in standard viral load testing. We asked a series of questions to establish the extent of treatment taking and viral suppression in men with diagnosed HIV.

Across the whole sample of men with diagnosed HIV, 80.9% were currently taking anti-HIV treatments. Those with 'White British' (81.0%) 'White other' (86.2%) and 'Other' (78.3%) ethnicities were more likely than those from Asian & Asian/White (64.7%) and Black & Black/White (64.5%) ethnicities to be doing so. As were those with higher educational qualifications (84.4%) compared to those with low (79.8%) and medium (75.4%). There were no differences in the likelihood of currently taking treatments between their Public Health England Region of residence, or whether they were a migrant or UK-born; their relationship status with men or by sexual identity.

Those who were taking treatments had been diagnosed with HIV considerably longer (mean 9.2 years, sd = 7.5) than those who were not on treatments (mean 4.4 years, sd = 4.9). Those who were taking treatments were older (mean 43.3, sd = 10.9) on average, than those who were not (mean 37.4 years, sd = 11.1), probably reflecting a longer period of living with HIV.

All men with diagnosed HIV who had ever seen a health professional for monitoring (98.8%) were asked the results of their last viral load test and offered the responses in the first column of the table below. Only one-in-twenty (5.3%, n=72) did not know their viral load, of which 40.2% (n=29) had been told but could not recall it. Those not on HIV treatments were much more likely to have reported that they had not been given their result or to have forgotten it.

Last viral load test result (n=1356, missing 5)	**% (n) overall**	**% not on treatments** (n=246)	**% on treatments** (n=1051)
Undetectable	79.9 (1084)	27.6 (68)	91.8 (965)
Detectable	14.7 (200)	50.4 (124)	6.6 (69)
Told but doesn't remember result	2.1 (29)	8.1 (20)	0.8 (8)
Measured but was not told the result	1.2 (16)	4.9 (12)	0.4 (4)
Was not measured	0.7 (9)	3.3 (8)	0.1 (1)
I don't remember	1.3 (18)	5.7 (14)	0.4 (0.4)

The vast majority of men had received the result of a viral load test the last time they their infection monitored. Excluding men who did not remember, those who had not been told the result and those who had not had a viral load test, 84.4% of men with diagnosed HIV had an undetectable viral load the last time their infection was monitored.

The majority of respondents on treatments reported an undetectable viral load (91.8%) and four fifths of all respondents who had ever been monitored (79.9%) said that they had a last viral load test result which was undetectable. Of those who said they knew the result of their last viral load test, 93.3% of those on treatments were undetectable as were a third (35.4%) of those who were not currently on treatments. Among the 1034 people who were currently on anti-HIV treatments, had their viral load monitored and were told and remembered their last result, those under 25 were most likely to describe their viral load as detectable (40.0%) compared to others (5.8%). Those with detectable viral load were significantly younger, on average (mean 37.5 years, sd = 12.6) than those who reported being undetectable (mean 43.9 years, sd = 10.7).

Those with detectable viral load had been diagnosed on average for a shorter time (mean 4.8 years, sd = 6.6) than those with an undetectable viral load (mean 9.6, sd = 7.4). There were no other significant relationships with demographic characteristics.

4. RISK AND PRECAUTION BEHAVIOURS: SEX AND DRUGS

For sexual HIV transmission to occur a number of different circumstances and events must coincide: sexual contact between HIV infectious and HIV susceptible partners, particular sexual acts occurring, with sufficient transfer of bodily fluids. Several different things can interrupt this chain of events: sexual partner rejection/selection, anti-viral treatment in the HIV positive partner, prophylaxis treatment (PrEP or PEP) in the HIV negative partner, and safer sex (avoiding specific sexual acts or using condoms and lubricant).

Sexual behaviours related to HIV transmission can be grouped into risk behaviours (eg. acquiring new sexual partners, open or concurrent relationships, anal intercourse, ejaculation into the body) and precautionary behaviours (eg. using condoms, using lubricant, withdrawal). In this chapter we report on a range of behaviours that contribute or detract from HIV transmission.

4.1 COMMONALITY OF PRECAUTIONARY SEXUAL BEHAVIOURS

Men were asked, *Which of the following would you say are part of your approach to reducing the potential for harm from your sex life?* They were offered a list of 19 precautionary tactics generated from health promotion strategies and previous research. In the questionnaire the items were randomly ordered on each presentation to counteract order effects. Men were asked to tick as many as applied to them. The proportion of men indicating each tactic is given in the table below. Because some of the tactics are HIV-status specific, we report on each tactic separately for men with and without diagnosed HIV.

Approaches to reducing the potential for harm from your sex life	Men without diagnosed HIV (n=13502)	Men with diagnosed HIV (n=1347)	Probability of difference
I use lubricant for intercourse	77.3	73.3	<.05
I make sure I know my current viral load	--	72.3	--
I try to avoid sex with people who have HIV	63.0	3.3	<.05
I sometimes decline sex partners	55.7	47.4	<.05
I wear condoms when I'm 'active' in intercourse (doing the fucking)	53.2	35.4	<.05
If I have an infection, I avoid sex until it is cured or managed	53.4	66.5	<.05
I make sure I know my current HIV status	53.1	60.4	<.05
My partners wear condoms when I'm 'passive' in intercourse (getting fucked)	50.2	34.4	<.05
I regularly test for other STIs	40.7	69.0	<.05
I talk about HIV and/or STIs with potential sex partners	39.3	53.2	<.05
I'd use PEP if I thought I'd been exposed to HIV	33.9	--	--
I date potential sex partners until we get to know each other better	29.5	12.0	<.05
I avoid using poppers when having 'passive' intercourse	20.8	9.4	<.05
I avoid 'passive' intercourse (getting fucked) altogether	18.9	7.3	<.05
I avoid 'active' intercourse (doing the fucking) altogether	11.6	12.2	N.S.
I use gloves for fisting	5.9	9.9	<.05
I use condoms for giving oral sex (sucking cock)	3.2	2.4	N.S.
I try to avoid sex with people who do not have HIV	2.7	27.5	<.05
I use Pre-Exposure HIV Prophylaxis (PrEP)	1.9	--	--

The most commonly cited tactic for both men with diagnosed HIV and others was using lubricant for anal sex. However, the next two most common tactics for men with diagnosed HIV were knowing their current viral load and regular STI screenings, while for men without HIV they were avoiding sex with men with HIV and declining sex partners.

Only two of the tactics were equally common among the two groups: using condoms for giving oral sex (which was uncommon at 3.1% of all men) and avoiding insertive anal sex (which was relatively uncommon at 11.7% of all men).

All other tactics were either more common among men with diagnosed HIV (knowing one's HIV status, regular STI testing, avoiding sex when infected with an STI, talking about HIV/STIs with potential sex partners, avoiding sex with men without HIV, using gloves for fisting), or more common among men without HIV (declining sex, dating potential sex partners, avoiding sex with men with HIV, avoiding receptive anal sex, using condoms for receptive anal sex, using condoms for insertive anal sex, using lubricant for anal sex, and avoiding poppers during anal sex).

4.2 USING HIV POST-EXPOSURE PROPHYLAXIS (PEP)

If HIV negative men are sexually exposed to HIV, taking a course of anti-HIV drugs following exposure can prevent infection from occurring if started swiftly. This treatment is known as Post-Exposure Prophylaxis.

Men were asked *Have you ever taken PEP?* Overall, 7.2% indicated they had taken PEP. This proportion was the identical among men with and without diagnosed HIV.

Have you ever taken PEP? (N=14,930, missing 430)	**% of all**	**% by HIV testing history**		
		Never tested (N=3,527)	Last test negative (N=10,069)	Diagnosed positive (N=1,334)
No	92.8	99.7	90.4	92.7
Yes	7.2	0.3	9.6	7.3

This is the fourth year GMSS has asked about taking PEP: in GMSS 2003 only 0.6% said they had ever taken PEP, rising to 1.2% in GMSS 2005 and to 2.4% in GMSS 2007. In GMSS 2014, 7.2% of all men said they had ever taken PEP. While this increase from 2007 to 2014 (2.4% to 7.2%) is substantial, compared with the number of men engaged in sex with a risk of HIV transmission the proportion seeking and taking PEP remains small.

The tactic of taking PEP requires awareness of PEP and service seeking. The extent of these needs for PEP are reported in Section 5.5.

4.3 SEX WITH MEN IN THE LAST 12 MONTHS

While the respondents' sex with women clearly has the potential to transmit HIV, GMSS is concerned with mapping male homosexual behaviour and not heterosexual behaviour. Here we report on the homosexual behaviour of the entire sample, focussing on the population parameters pertinent to HIV transmission.

HIV can only be transmitted between infected and uninfected people. A central tactic for men to engage in the kind of sex they prefer without risk of HIV is to establish whether they and their sexual partner share the same HIV status before engaging in the acts. The extent to which this is possible with confidence depends both

on whether men have HIV infection and the social context between partners prior to sex (including but not limited to verbal dialogue).

Even where men know with confidence they do have the same HIV status, acquiring new sexual partners in the absence of STI screening risks passing on other STIs, which themselves can facilitate HIV. STI transmission is more likely if anal intercourse occurs, and more likely again if a condom is not used. So acquiring new sexual partners (in the absence of an STI screen), even if those partners are HIV sero-concordant and non-penetrative, contributes to population HIV risk by risking the spread of STIs. Therefore the rate of sexual partner change in the population is a key sexual health parameter, whatever kind of sex men are having.

4.3.1 Recency of engagement in sex, anal intercourse (AI) and unprotected anal intercourse (UAI)

In order to attempt some standardisation of measurements, we provided respondents with the following definition of sex: *In this survey, we use 'sex' to mean physical contact to orgasm (or close to orgasm) for one or both partners.*

Men were then asked *When did you last have any kind of sex with a man (please include any sexual contact, not just anal intercourse)?* Forty-six men declined to answer this question and of the remainder 1.8% (n=275) indicated that they had never had sex with a man. These 321 men have been excluded from the following analysis, which includes only those 15039 men who had ever had sex with a man. The table below shows the proportions of men who had sex with another man within increasing time-periods.

Men were also told, *In this survey we use the term "intercourse" (fucking, screwing) to mean sex where one partner puts his penis into the other partner's anus or vagina, whether or not this occurs to ejaculation.* They were then asked: *Have you ever had intercourse with a man (either "passive" or "active" fucking), either with or without a condom?* Men who indicated yes they had engaged in anal intercourse were asked, *When did you last have intercourse with a man (either with or without a condom)?* The table below also shows how recently respondents had anal intercourse.

Finally, men who had engaged in anal intercourse were asked, *On that most recent occasion of intercourse, did you have unprotected intercourse (that is without a condom)?* Those who indicated 'no' were asked when their most recent occasion of anal intercourse was. Combining these answers gave the recency of the last occasion of unprotected anal intercourse for all men. The proportions falling within each time period for each class of behaviour are shown in the table below.

When did you last have...	***...any kind of sex with a man?*** (n= 15,039, missing 0)		***...anal intercourse with a man?*** (n=14,564, missing 475)		***...unprotected anal intercourse with a man?*** (n=14,354, missing 685)	
	Number	%	Number	%	Number	%
Within the last 24 hours	3032	20.2	1483	10.2	1060	7.4
Within the last 7 days	5623	37.4	3549	24.4	2366	16.5
Within the last 4 weeks	3178	21.1	2844	19.5	1979	13.8
Within the last 6 months	1946	12.9	2567	17.6	2223	15.5
Within the last 12 months	539	3.6	1068	7.3	1188	8.3
Within the last 5 years	541	3.6	1182	8.1	1720	12.0
More than 5 years ago	180	1.2	582	4.0	1227	8.5
Never	--	--	1289	8.9	2591	18.1

The majority of men who had ever engaged in sex with a man had also experienced anal intercourse – only 8.9% had never done so. However, these data indicate that anal sex is not a universal activity for men who have sex with men. While 20.2% had sex with a man in the last 24 hours, only 10.2% had anal sex in the last 24 hours.

Similarly, while 4.8% had not had sex in the last year, 21.0% had not had anal sex in the last year.
While 18.1% had never engaged in unprotected anal intercourse, 20.5% had done so but not within the last 12 months, and 61.4% had done so in the last 12 months.

4.3.2 Sex with steady male partners in last 12 months

As noted above, 95.2% of respondents who had ever had sex with a man had done so in the last year. The following concerns men who had sex with men in the last year (N=14318).

Men were told, *In this survey we use the term 'steady partners' to refer to boyfriends or husbands that mean you are not 'single', but not to partners who are simply sex buddies*. They were then asked, *In the last 12 months have you had any kind of sex with a steady male partner?*

Overall 60.7% (N=14241, missing n=77) of the men who had sex in the last year indicated they had sex with a steady male partner in that time.

Men who had a steady partner (N=8641) were asked how many different steady partners they had in the last year, how many they had anal intercourse with and how many of those were without a condom.

Most men had only one steady partner. Of the men who had a steady partner, 71.8% had only one steady partner in the last year, 14.9% had two and 6.0% had three. The remaining 7.3% had four or more steady partners in the last 12 months (N=8565, missing steady partner numbers for 76).

Anal intercourse was common with steady partners. Of the men with a steady partner, a minority (7.5%) had no anal intercourse with any steady partner; 68.0% had anal intercourse with only one steady partner and the remaining 24.5% had anal intercourse with two or more partners (N=8557, missing number of steady anal intercourse partners for 84).

Fewer men had unprotected anal intercourse with steady partners but this was still common. Of those with a steady partner 21.9% had no unprotected intercourse, 63.9% had UAI with one steady partner only and the remaining 14.2% had UAI with more two or more steady partners.

So in summary, among men who had sex in the last 12 months, over that period:

- 40.4% had no steady partner;
- 4.6% had a steady partner/s but no anal intercourse with steady partners;
- 12.0% had a steady anal intercourse partner/s and always used a condom;
- 35.1% had unprotected anal intercourse with one steady partner only;
- 7.8% had unprotected anal intercourse with two or more steady partners.

4.3.3 Sex with non-steady male partners in the last 12 months

Men who had sex with a man in the last year were told, *In this survey we use the term 'non-steady male partners' to mean men you have had sex with once only, and men you have sex with more than once but who you don't think of as a steady partner (including one night stands, anonymous and casual partners, regular sex buddies)*.
Of the men who had sex with a man in the last year, 73.1% (N=14204, missing 114) indicated they had sex with a non-steady partner.

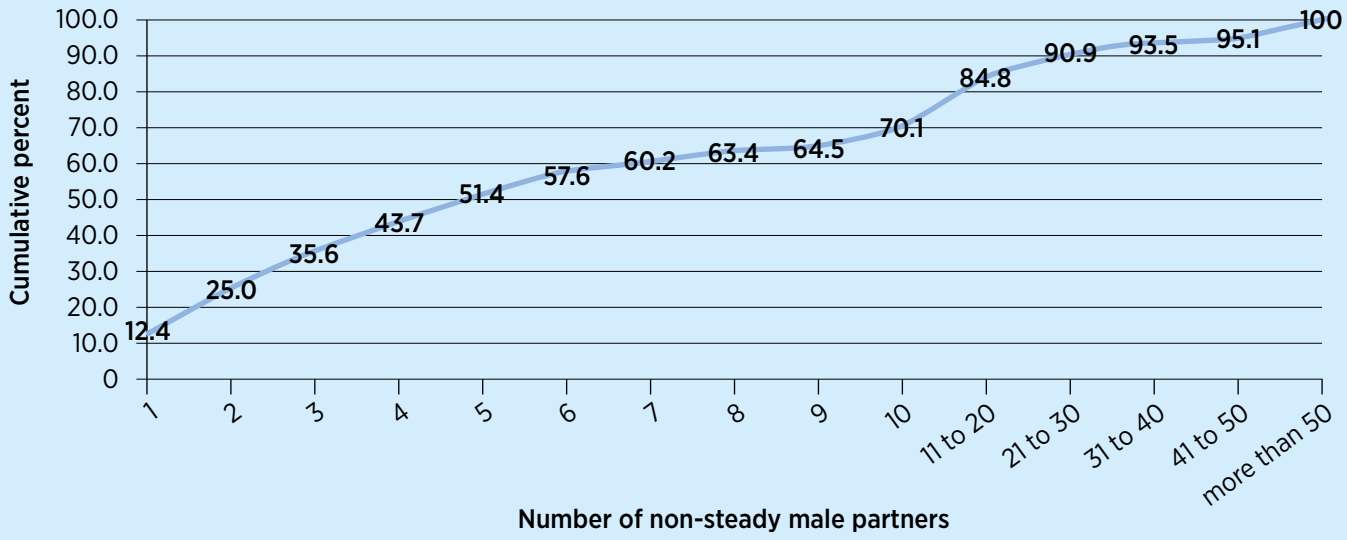
Men who had a non-steady partner (N=10382) were asked how many different non-steady partners they had in the last year, how many they had anal intercourse with and how many of those were without a condom.

The majority (87.6%) had more than one non-steady partner. The figure below shows the cumulative proportion of men (who had a non-steady partner) who had an increasing number of non-steady partners.

Among those who had a non-steady partner, the median number of non-steady partners was 5 (as the higher

values were pre-banded we do not provide means); 29.9% of men with a non-steady partner had more than 10 in the last 12 months.

NUMBER OF NON-STEADY MALE PARTNERS IN THE LAST 12 MONTHS
(among the 73.1% who had a non-steady partner, N=13253, missing 28)



Of the men with a non-steady partner, 14.6% had no anal intercourse with a non-steady partner; 16.0% did so with one; 13.6% did so with two and 9.6% did so with three. The remaining 46.2% had anal intercourse with four or more partners. The median number of non-steady anal intercourse partners (among those who had a non-steady partner) was 3 (N=10296, missing number of non-steady anal intercourse partners for 86).

Of the men who had a non-steady partner, 43.7% had no unprotected anal intercourse with a non-steady partner; 21.0% had UAI with one non-steady, 11.8% had UAI with two non-steadies and the remaining 23.5% had UAI with three or more non-steady partners.

So in summary, among men who had sex with a man in the last year;

- 27.5% did not have a non-steady partner;
- 10.8% had a non-steady partner/s but no anal intercourse with non-steadies;
- 27.0% had anal intercourse with non-steady partners and always used a condom;
- 12.9% had UAI with one non-steady male partner;
- 21.8% had UAI with more than one non-steady male partner.

In the absence of an equal number of STI screens, each non-steady partner carries some risk of STI transmission. This risk is higher if men have anal intercourse and higher again if they do not use a condom.

Although some of these men may have been exchanging HIV status information and avoiding UAI with partners of different statuses, all acts of UAI between men carries risk of STI transmission which are themselves harmful and which facilitate the HIV epidemic (especially gonorrhoea).

4.3.4 Combining steady and non-steady partners

The following table shows the proportions of men overall who had each combination of steady and non-steady partners of different type. (The row and column totals vary slightly from the figures in the above sections due to missing data – some men gave answers to steady but not non-steady partners while others did the reverse.)

% of total **Men who had sex with a man in the last year** (N=13501, missing 817)		**Sex with steady partners**				
		No steady partner (39.7%)	Non-penetrative sex (4.7%)	AI always with condom (12.2%)	UAI with one steady (35.6%)	UAI with 2+ steadies (7.9%)
Sex with non-steady partners	No non-steady partner (27.1%)	4.5	1.8	3.9	15.5	1.3
	Non-penetrative sex (10.9%)	5.5	1.3	1.1	2.8	0.4
	AI always with condom (27.0%)	12.1	0.8	4.9	7.9	1.3
	UAI with one non-steady (13.0%)	6.8	0.3	1.2	3.8	0.9
	UAI with 2+ non-steadies (21.9%)	10.9	0.4	1.1	5.6	3.9

What is striking is the wide distribution of men across the cells. There are very many combinations of steady and non-steady partners, with varying degrees for risk for STI and HIV transmission.

Although all these men had said they had sex with a man in the last year, 4.5% also said they had not had sex with a steady partner in that time, nor had they had sex with a non-steady partner. This may reflect the difficulties of defining steady and non-steady partners. Although the definitions attempted to be inclusive (by defining steady partners and making non-steady partners all those who were not steady), some men may have felt their sexual relationships did not fit with any of the definitions given.

Overall, 35.9% said they had not had UAI in the last year, while 64.1% indicated they had.

The most common pattern for men in the last year was to have UAI with one steady partner and to have no non-steady partners, which was the pattern for 15.5% of men who had sex in the last year.

4.4 USING PSYCHOACTIVE DRUGS

Sexual behaviours and drug using behaviours often occur in the same people and have a complex relationship to each other. As well as having potential for harm in themselves, use of psychoactive drugs can facilitate sexual HIV risk behaviours. There are good reasons for HIV prevention programmes to address drug taking behaviours and associated needs. In this chapter we consider views of men with diagnosed HIV on the relationship between substance use and their own infection, before reporting the commonality of using a range of drugs, and the commonality of injecting drugs.

4.4.1 The part alcohol and drugs play in HIV acquisition

Men with diagnosed HIV were asked, *How large a part do you think alcohol played in your acquiring HIV?* and, *How large a part do you think other recreational or illicit drugs played in your acquiring HIV?* The responses offered for both questions were: *Not at all / A little / A lot / I don't know.*

Men with diagnosed HIV (N=1370)	***How large a part do you think alcohol played in your acquiring HIV?***		***How large a part do you think other recreational or illicit drugs played in your acquiring HIV?***	
	% of all	% excluding 'don't know'	% of all	% excluding 'don't know'
Not at all	64.1	68.8	73.8	77.0
A little	13.9	14.9	8.4	8.8
A lot	15.1	16.3	13.7	14.2
I don't know	6.9		4.1	

Overall, 6.9% indicated 'I don't know' for alcohol and 4.1% for drugs. Of those who did know, 31.2% thought alcohol played a part in their HIV acquisition (including 16.3% who thought it played a large part), and 23.0% thought other drugs played a part (including 14.2% who thought they played a large part).

Comparing the answers of those men who were diagnosed with HIV in the preceding 12 months with those who were diagnosed more than 12 months ago, the proportion indicating they thought alcohol played a part in their infection was not significantly different (29% and 31% respectively).

However, 31% of the men diagnosed in the last year indicated other drugs played a part in their acquiring HIV, compared with 22% of those diagnosed for more than 12 months, suggesting that drugs (but not alcohol) are playing an increasing (but still not primary) role in the HIV epidemic.

The following table shows the proportions of men with HIV giving each combination of answers.

% of total Men with diagnosed HIV (N=1236, missing 134)		***How large a part do you think alcohol played in your acquiring HIV?***		
		Not at all	A little	A lot
How large a part do you think other recreational or illicit drugs played in your acquiring HIV?	Not at all	57.6	9.0	10.0
	A little	4.7	3.0	1.3
	A lot	6.7	2.8	4.9

More than half of the men (58%) thought neither alcohol nor drugs played a part in their acquiring HIV; 11% thought only alcohol played a part; 19% thought only other drugs played a part; and 12% thought both alcohol and other drugs played a part in their acquiring HIV.

4.4.2 Recency of drugs used

All men were asked how recently they had used five types of drug that it was not illegal to possess at the time of the survey: alcohol; tobacco products; poppers (nitrite inhalants); Viagra®, Cialis®, Levitra® or other substances that help keep an erection; and sedatives/tranquilizers (Valium®, Rivotril®, Rohypnol®). The following table shows the *cumulative proportions* who had used each of the five types of drug over increasing periods of time.

Cumulative % consuming drug within the last...	Alcohol	Tobacco	Poppers	Viagra etc.	Sedatives
24 hours	44.0	29.2	5.7	2.2	1.2
7 days	77.3	34.4	15.5	8.4	2.4
4 weeks	88.6	38.7	23.9	13.3	3.7
6 months	93.4	43.3	34.6	19.0	5.9
12 months	95.0	46.5	41.6	22.7	7.7
5 years	96.2	52.2	53.0	28.4	10.9
Ever	97.5	61.7	62.9	31.6	13.7

Alcohol is by far the most commonly used drug at all time-scales, with 44% using in the last 24 hours and over 90% using within the past 6 months. Tobacco was the second most commonly used drug within the last six months but was comparable to poppers at 5 years and ever.

Men were then asked *Have you EVER taken any other recreational or illicit drugs?* Overall, 52.6% said they had. Those who indicated 'yes' were asked how recently they had used each of eleven illicit drugs or types of drug. These were: cannabis (grass, weed, hash, marijuana); ecstasy (E, XTC, MDMA); amphetamine (speed); crystal methamphetamine (crystal, meth, Tina); heroin or related drugs; mephedrone (4-MMC, meow, methylone, bubbles); GHB/GBL (liquid ecstasy); ketamine; LSD (acid); cocaine; crack cocaine. The following table gives the cumulative proportion of respondents who had used each of the eleven drugs with increasing time periods.

Cumulative % consuming drug within the last...	Cannabis	Ecstasy	Speed	Crystal meth	Heroin
24 hours	4.3	0.3	0.2	0.4	0.1
7 days	7.6	2.1	0.7	1.0	0.1
4 weeks	12.0	5.7	1.7	2.0	0.2
6 months	19.9	11.5	3.8	3.8	0.3
12 months	25.9	15.3	5.8	4.8	0.5
5 years	36.3	23.7	12.1	6.6	0.9
Ever	48.6	32.6	24.2	8.3	2.1

Cumulative % consuming drug within the last...	Mephedrone	GHB/ GBL	Ketamine	LSD	Cocaine	Crack
24 hours	0.8	0.5	0.2	0.1	0.7	0.1
7 days	2.8	1.7	0.6	0.2	2.9	0.2
4 weeks	5.3	3.2	1.8	0.4	6.6	0.4
6 months	8.5	5.2	4.6	1.1	12.7	0.7
12 months	10.9	6.5	7.5	1.6	17.3	1.0
5 years	15.6	9.8	14.0	4.0	25.2	2.0
Ever	16.5	12.5	19.5	12.8	32.2	3.8

The most commonly used illegal drug at all time-scales was cannabis, with almost half (48.6%) having ever used it and over a quarter (25.9%) having used it in the last year.

In the last week, cocaine and mephedrone were next most commonly used in periods up to six months, but over a year period more men used ecstasy than these two, indicating that the commonality of drugs used varies with varying time periods.

4.4.3 Injecting drugs

Overall, 2.9% indicated they had ever injected drugs (other than anabolic steroids or prescribed medicines), including 1.8% (n=282) who had done so in the last 12 months. This 12 month figure was 3.3% for all men living in London, 11.3% for all men living with diagnosed HIV in England, and 14.4% for men living with diagnosed HIV in London.

Of those who had injected in the last 12 months (or had someone else inject for them), 1.8% had injected GHB/ GBL, 2.8% heroin, 6.4% amphetamine, 9.9% ketamine, 59.9% crystal methamphetamine, 60.6% mephedrone.

4.4.4 Chemsex drug use in the last 4 weeks

Three drugs have recently become closely associated with sex between men – mephedrone, GHB/GBL and crystal meth. Combining sex with use of these drugs has become known as chemsex, an activity which can give rise to a variety of harms (Bourne et al., 2015).

Although the proportion of men using each of the chemsex drugs is relatively small nationally, their use is highly concentrated such that in some groups their use is very common. Two of the ways in which chemsex drug use varies strongly is with geography and HIV testing history. As noted above, 26.4% of the sample lived in London and 9.0% were living with diagnosed HIV infection. The following table shows the proportions using each of the chemsex drugs (as well as cocaine and ecstasy) in the past 4 weeks, overall and separately for men living in London and those with diagnosed HIV.

	Use in last 4 wks, entire England sample (%)	Use in the last 4 wks, England (%)		Use in the last 4 wks, England (%)	
		Rest of England	London	Not diagnosed positive	Diagnosed HIV positive
Cocaine	6.6	5.3	10.4	6.0	12.9
Ecstasy	5.7	4.6	8.8	5.3	10.0
Mephedrone	5.3	3.2	11.6	4.1	17.4
GHB/GBL	3.2	1.5	8.2	2.2	13.0
Crystal meth	2.0	1.0	4.9	1.2	10.4

Nationally, cocaine and ecstasy were more commonly used than the three typical chemsex drugs. In London, however, mephedrone was more common than cocaine or ecstasy. All five drugs were more commonly used in London than elsewhere. Compared to men living elsewhere, men living in London were between 2 (cocaine and ecstasy) and 6 (GHB) times more likely to have used each drug in the last 4 weeks.

Among men with diagnosed HIV, ecstasy was the least commonly used of the five drugs, with mephedrone and GHB being most common. All five drugs were more commonly used by men with diagnosed HIV. Compared to men without diagnosed HIV, positive men were between 2 (cocaine and ecstasy) and 9 (crystal meth) times more likely to have used each drug in the last 4 weeks.

The three chemsex drugs, cocaine and ecstasy were all strongly associated with each other (use of any one in the past 4 weeks greatly increased the probability of use of each of the other four).

Overall, 6.6% (n=979) had used any of the three chemsex drugs (crystal, meph and G) in the last 4 weeks in England. The figure was 14.3% for all men living in London, 21.9% for all men living with diagnosed HIV in England, and 32.7% for men living with diagnosed HIV in London.

5. UNMET HIV PREVENTION NEEDS

This chapter reports on those questions that attempted to assess the extent of unmet HIV and STI prevention need among respondents. Prevention needs are defined as those capacities men require in order to have control over precautionary behaviours. Prevention needs range from the very specific (for example access to condoms) to the very general (for example social capital).

What constitutes HIV and STI prevention needs was agreed by the designers of the survey. The survey was not attempting to assess the validity of these needs but simply to measure the extent to which they are met among the men taking part.

5.1 HIV AND STI RELATED KNOWLEDGE

Given the extent of ignorance and hysteria that has historically accompanied the HIV epidemic, accurate knowledge has always been an important objective of HIV responses. Promoting knowledge is a somewhat unfashionable aim for HIV prevention, in an era focused on 'behaviour change' and widespread testing promotion via social marketing. However, knowledge remains the bedrock of HIV education and prevention.

GMSS 2014 was not assessing whether or not increasing knowledge reduced risk behaviours. It was a cross-sectional community-based survey with no power to determine causality. Nor were we trying to use the survey to determine what we want men to know. Community-based surveys are useful for assessing the extent to which men already know (or not) what health promoters want them to know.

In the survey all knowledge statements were true, and respondents were told this before being asked "Did you know that already..." For each question, respondents could choose one of the following answers:

- I already knew this
- I wasn't sure about this
- I didn't know this already
- I don't understand this
- I do not believe this

The question was designed in this way in order to increase the educational impact of taking part. Although this design is likely to overestimate knowledge (and therefore underestimate unmet needs), we valued the opportunity to promote basic knowledge provided by the survey.

The 14 knowledge items covered three key areas: HIV test-related knowledge (the first seven items in the table below); HIV transmission-related knowledge (the next four items) and STI-related knowledge (the final three items).

The items concerning HIV test-related knowledge were very widely known, with relatively few men being unsure or not already knowing the items. However, about one-in-eight (12.3%) of the whole sample were unsure or did not know "If someone becomes infected with HIV it may take several weeks before it can be detected in a test" and half (49.7%) of the entire sample did not know that "Doctors in the UK recommend that all men who have sex with men test for HIV at least once a year".

The following statements are all TRUE. Did you know this already? (N=15360)	Missing % (number)	% (excluding missing)				
		% already knew this	% were not sure about this	% didn't know this already	% don't understand this	% did not believe this
AIDS is caused by a virus called HIV.	0.3 (42)	98.4	1.1	0.2	0.0	0.3
You cannot be confident about whether someone has HIV or not from their appearance.	0.6 (90)	97.3	1.4	0.3	0.2	0.8
There is a medical test that can show whether or not you have HIV.	1.5 (233)	98.9	0.7	0.1	0.1	0.1
If someone becomes infected with HIV it may take several weeks before it can be detected in a test.	1.3 (201)	87.7	7.9	3.7	0.1	0.6
There is currently no cure for HIV infection.	1.9 (2.3)	94.3	4.0	0.7	0.1	0.9
HIV infection can be controlled with medicines so that its impact on health is much less.	1.4 (215)	95.6	3.3	0.7	0.1	0.2
Doctors in the UK recommend that all men who have sex with men test for HIV at least once a year.	1.0 (149)	50.3	21.7	26.4	0.6	1.0
Effective treatment of HIV infection reduces the risk of HIV being transmitted.	0.7 (100)	74.2	14.8	6.8	0.6	3.6
HIV **cannot** be passed during kissing, including deep kissing, because saliva does not transmit HIV.	0.5 (73)	81.1	13.0	3.8	0.2	1.9
You **can** pick up HIV through your penis while being 'active' in unprotected anal or vaginal sex (fucking) with an infected partner, even if you don't ejaculate.	0.7 (103)	86.4	10.1	3.1	0.2	0.3
You **can** pick up HIV through your rectum while being 'passive' in unprotected anal sex (being fucked) with an infected partner.	1.6 (242)	96.8	2.3	0.8	0.1	0.1
Even without ejaculation, **oral sex** (sucking and being sucked) carries a risk of infection with syphilis or gonorrhoea.	1.0 (152)	88.2	9.1	2.5	0.1	0.1
When HIV infected and uninfected men have sex together, the chances of HIV being passed on are greater if either partner has another sexually transmitted infection.	0.8 (122)	59.1	18.3	21.1	0.6	0.8
Most sexually transmitted infections can be passed on more easily than HIV.	0.8 (119)	72.4	16.6	9.5	0.3	1.3

The four items concerning HIV transmission-related knowledge were also relatively widely known, though more variation was evident in men's confidence in their knowledge. While the risk of contracting HIV via receptive sex without a condom was widely known (96.8%); the risk from insertive anal and vaginal intercourse (86.4%) was less well known. In addition almost a fifth (18.9%) of this relatively young sample of gay and bisexual men did not know "HIV cannot be passed during kissing, including deep kissing, because saliva does not transmit HIV" and a quarter did not know that "effective treatment of HIV infection reduces the risk of HIV being transmitted".

The final three items concerning and STI-related knowledge were also relatively widely known, though there remained substantial variation in men's confidence. However, one man in eight (11.8%) was not sure that "even without ejaculation, oral sex (sucking and being sucked) carries a risk of infection with syphilis or gonorrhoea " and one-in-four (27.6%) was not sure that "most sexually transmitted infections can be passed on more easily than HIV." Finally, almost 40% were not sure that "when HIV infected and uninfected men have sex together, the chances of HIV being passed on are greater if either partner has another sexually transmitted infection."

5.2 FREEDOM FROM FORCED HIV TESTING

Men's control over HIV testing includes freedom from forced testing as well as access to voluntary testing. All respondents were asked if they had *ever been forced or tricked into taking an HIV test when you did not want to take one?* 1.6% of men were unsure if they had ever been forced or tricked into taking an HIV test. Amongst the rest 2.8% of men said that they had been forced or tricked into taking an HIV test when they did not want to take one.

Have you ever been forced or tricked into taking an HIV test when you did not want to take one? (N=15,239, missing 121)	**Number**	**% overall**	**% excluding don't know responses**
No	14,582	95.7	97.2
Yes	416	2.7	2.8
I don't know	241	1.6	

5.3 ACCESS TO HIV AND STI TESTING

Whether men have access to HIV and STI testing depends both on the existence and characteristics of testing services, and the knowledge and confidence of men themselves. To test men's confidence in accessing HIV testing and STI screening services all men were asked, "How confident are you that you could get an(other) test for HIV if you wanted one?" and "How confident are you that you could get a test for sexually transmitted infections (STIs) other than HIV if you thought you needed it?"

How confident are you that you could get another test for HIV if you wanted one?	Never tested (N=3,567, missing 23)	Last test negative (N=10,245, missing 89)	All not tested positive (N=13,812, missing 112)
Very confident	58.2	89.1	81.2
Quite confident	24.6	8.2	12.4
A little confident	9.1	1.7	3.6
Not at all confident	5.0	0.7	1.8
I don't know	3.0	0.3	1.0

The majority of all those who had never tested for HIV or tested negative on their last test were confident they could get another test for HIV if they wanted one (91.9%/99.0%). Unsurprisingly those with prior experience of HIV testing were more likely to be very confident they could access another HIV test (89.1%) compared to those who had never tested before (58.2%). Only a relatively small minority of all men (1.0% in total) were unsure whether they could get a test if they wanted one, and this was far more common among those who had never tested (3.0%) and among those that had previously tested HIV negative (0.3%).

How confident are you that you could get a test for sexually transmitted infections (STIs) other than HIV if you thought you needed it? (N=15,226, missing 134)	Never HIV tested (N=3,569, missing 21)	Last HIV test negative (N=10,296, missing 38)	Diagnosed HIV positive (N=1,361, missing 9)
Very confident	63.3	86.6	91.1
Quite confident	23.6	9.8	5.7
A little confident	7.9	2.2	1.3
Not at all confident	3.5	0.8	1.0
I don't know	1.7	0.5	0.9

The majority of all men surveyed, (97.7%) were confident they you could get a test for sexually transmitted infections (STIs) other than HIV if they needed to. Because STI screening and HIV testing often occur in the same services those that had never tested for HIV were less likely to be "very confident" they could get an STI screen than those that tested for HIV – 63.3% were very confident they could access STI testing compared to 86.6% of those previously tested HIV negative and 91.1% of those with diagnosed HIV. Only a relatively small minority of all men (1.0% in total) were unsure whether they could get a test for STIs other than HIV, if they wanted one, and this was far more common among those had never tested (1.7%) for HIV, than among those previously tested negative (0.5%) or positive (0.9%) for HIV.

5.4 CONFIDENCE IN HIV STATUS

We want men to be confident and accurate in their perceptions of their own HIV status. Men who have HIV can benefit from medical care which improves their prognosis only if they have their HIV infection diagnosed. In addition, men with HIV infection who attain viral suppression via anti-HIV drugs are less likely to pass their HIV infection on to others.

Not knowing one's HIV status is an obvious motivation for testing, and asking men to consider how certain

they are of their current status is a common tactic of health promoters seeking to increase HIV testing uptake. In GMSS 2014 men were also asked *What do you think your current HIV status is (whether or not you've ever tested)?* (n=15,153, missing 207 or 1.3%). They were asked to choose one from the five options in the table below, which shows the proportions indicating each option overall as well as within each HIV testing history group.

Perceptions of current HIV status (N=15,153, missing 207)	**% of all**	**% by HIV testing history**		
		Never tested (N=3,579)	Last test negative (N=10,214)	Diagnosed HIV positive (N=1,360)
Definitely negative	55.5	57.7	62.0	0.4
Probably negative	31.3	34.8	34.2	0.1
Not sure / don't know	3.9	6.8	3.4	0.2
Probably positive	0.3	0.4	0.3	0.4
Definitely positive	9.0	0.2	0.2	98.9

Nearly two-thirds of men (64.5%) were definite about their HIV status, either positive (9.0%) or negative (55.5%). However, the remaining third either were unsure of their HIV status, thought it was probably negative (31.3%) or probably positive (0.3%). If we consider this variable in terms of HIV prevention need, we might say that all those who are not certain of their HIV status are in need. Therefore, over a third (35.5%) of men are in need of greater certainty about their HIV status.

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

5.5 KNOWLEDGE OF AND SEEKING PEP

For the fourth time since 2003, GMSS included a set of questions about whether men had heard of post exposure prophylaxis (PEP) and whether they had ever tried to access PEP.

Have you heard of post exposure prophylaxis (PEP)? (N=15,169, missing 191)	**Number**	**% overall**
No	5,599	36.9
Yes	9,570	63.1

Overall 63.1% of all men said they had heard of PEP, leaving 36.9% who were in need of basic PEP awareness. In comparison, 56.3% of all men said they had ever heard of PEP in GMSS 2007 (Hickson et al., 2009), higher than the 38.5% in GMSS 2005 (Dodds et al., 2006) and 22.2% in GMSS 2003 (Reid et al., 2004). The GMSS 2014 figure of 63.1% thus represents a small but ongoing increase in PEP awareness since the first UK PEP awareness campaign in 2003-04. However, more than a third (36.9%) of all men participating in the survey in 2014 remained unaware of the existence of PEP.

Have you ever tried to get PEP? (N=15,014, missing 346)	% of all	% by HIV testing history		
		Never tested (N=3,535)	Last test negative (N=10,121)	Diagnosed positive (N=1,358)
No	91.5	99.6	88.7	91.5
Yes	8.5	0.4	11.3	8.5

Data on ever attempting to access PEP showed a more substantial increase from GMSS 2007. In GMSS 2003, 1.0% of men said they had ever tried to get PEP and in GMSS 2005 this rose to 1.4%. In GMSS 2007, 3.4% said they have ever tried to get PEP, compared to 8.5% of men in 2014. Since this question asks if men have ever tried to access PEP, then estimates should only ever go up. While the change from 2007 to 2014 (3.4% to 8.5%) is substantial ever having sought PEP remains relatively uncommon.

The proportion actually taking PEP is reported in section 4.2 above

5.6 ACCESS TO CONDOMS

Easy access to appropriate condoms and lubricant has long been considered an essential prerequisite for safer sex. To assess men's access to condoms we asked *In the LAST YEAR, where have you usually got condoms from?* They could choose more than one answer.

Almost one-in-six (17.7%, n=2684) said they did not usually get condoms (presumably because they do not engage in anal intercourse or do not use condoms).

In the LAST YEAR, where have you usually got condoms from? (Tick as many as apply) (overall N=15, 188 missing 172)	Number	% overall	% of those getting condoms in the last year
I got them free	8329	54.8	64.1
I bought them elsewhere	4930	32.5	38.6
My sexual partners usually had them	3779	24.9	28.5
I bought them online	1873	12.3	14.7
My friends usually gave them to me	701	4.6	5.2
Elsewhere	1304	8.6	10.1
I don't usually get condoms	2684	17.7	

Amongst those who usually get condoms from somewhere, almost two thirds (64.1%) reported having received free condoms, two fifths (38.6%) bought them somewhere else than online and 14.7% online, over a quarter (28.5%) usually got them through a partner. A minority had received them from friends 5.2%.

To examine the extent to which not having a condom available might be a problem for some men, all respondents were also asked *When was the last time you wanted a condom but did not have one?*

When was the last time you wanted a condom but did not have one? (overall N=15,222; missing 138)	Number	%	Cumulative %
Within the last 24 hours	131	0.9	0.9
Within the last 7 days	397	2.6	3.5
Within the last 4 weeks	599	3.9	7.4
Within the last 6 months	1072	7.0	14.0
Within the last 12 months	794	5.2	19.2
Within the last 5 years	1210	7.9	27.1
More than 5 years ago	936	6.1	33.2
Never	10083	66.2	100.0

One third of all men (33.8%) reported ever not having a condom when they had wanted one, with two thirds (66.2%) reporting this had never happened to them. Among those who had experienced not having a condom when they wanted one over half (58.3%) said it had been within the previous year and 2.5% in the previous 24 hours.

All respondents were asked *When was the last time you had unprotected anal intercourse solely because you did not have a condom?*

When was the last time you had unprotected anal intercourse solely because you did not have a condom? (N=15189, missing 171)	Number	%	Cumulative %
Within the last 24 hours	113	0.7	0.7
Within the last 7 days	284	1.9	2.6
Within the last 4 weeks	394	2.6	5.2
Within the last 6 months	741	4.9	10.1
Within the last 12 months	591	3.9	14.0
Within the last 5 years	1089	7.2	21.2
More than 5 years ago	879	5.8	27.0
Never	11,098	73.1	100.0

Just over one quarter (26.9%) reported ever having unprotected anal intercourse solely because they did not have a condom. Among those who had experienced having unprotected anal intercourse solely because they did not have a condom when they wanted one, over half 51.9% said it had been within the previous year and 2.8% in the previous 24 hours.

6. INTERVENTION PERFORMANCE

There are a wide range of activities, services and interventions that can meet unmet HIV prevention needs, carried out and delivered in a wide range of settings. Here we consider the collective reach of HIV and STI testing services, as well as some of their qualities.

6.1 COVERAGE OF STI SCREENING

Regular screening for sexually transmitted infections is a common tactic to reduce harm among men with multiple sexual partners (see Section 4.1). Diagnosis of infections is the gateway to their management or cure, and knowledge of infectivity allows men to make better decisions about abstaining from sex.

In the UK, annual screening is recommended by medical authorities for all homosexually active men, and more often for men changing sexual partners frequently.

Have you ever had a test for sexually transmitted infections (STIs) other than HIV? (n=15,257 missing 103)	**Number**	**%**
No	3640	23.9
Yes	11527	75.6
I don't know	90	0.6

Men who had ever tested for an STI other than HIV were on average older (mean = 35.7, sd = 12.7). than those who had not (mean = 32.3, sd= 13.9). Those who had ever tested were also more likely to have a White Other (83.1%) or Other ethnicity (81.3%) compared to those with a Black or Black/white (80.8%), White British (75.0%) or Asian or Asian/White (70.3%) ethnicity. Men living in the London region were considerably more likely to have ever tested for STIs other than HIV (85.9%) compared to those in the South of England (74.5%), North of England (72.0%) and the Midlands and East of England (70.8%), as were immigrants to the UK (81.4%) compared to those born in the UK (75.0%). Men with higher levels of education (81.6%), were also more likely to have ever tested compared to those with low levels (68.3%). Men with a queer sexual identity were most likely to have tested for STIs other than HIV (81.9%) closely followed by gay identified men (78.0%). Men who identified as bisexual (61.3%) or a straight or heterosexual (41.4%) were far less likely to have ever tested for STIs other than HIV.

All those men (75.6%) that had ever had a test for sexually transmitted Infections other than HIV were asked *When did you last have a test for STIs other than HIV?* Among the men who had ever had an STI test, almost half (47.3%) had screened for STIs in the last 6 months and more than two thirds (68.3%) had done so in the last 12 months.

When did you last have a test for STIs other than HIV? (n=11,440 missing 87, men who had ever had a test for STIs other than HIV)	**Number**	**%**	**Cumulative %**
Within the last 24 hours	71	0.6	0.6
Within the last 7 days	358	3.1	3.7
Within the last 4 weeks	1326	11.6	15.3
Within the last 6 months	3649	31.9	47.2
Within the last 12 months	2404	21.0	68.2
Within the last 5 years	2594	22.7	90.9
More than 5 years ago	1038	9.1	100.0

Seeking early testing and care for symptoms is a key precautionary behaviour but since many STIs do not show symptoms, seeking annual screening without symptoms is also important. Men who had tested for STIs in the last 12 months were asked *Did you have any symptoms on that occasion?*

Did you have any symptoms on that occasion? (n=7,647 missing 161), men who had tested for STIs in the last 12 months	**Number**	**%**
No	6318	82.6
Yes	1263	16.5
I don't remember	66	0.9

About one in six (16.5%) of the men who sought STI testing in the last 12 months had symptoms at their last test. The majority of men testing for STIs are screening asymptomatically.

Overall then, 48.5% had not tested for STIs in the last 12 months and 51.5% had done (8.5% because of symptoms and 43.0% without symptoms).

6.2 COVERAGE OF HIV TESTING

Testing for HIV (and receiving the result) informs an individual of whether or not they are infected with HIV. This behaviour meets a central HIV prevention (and care) need – confident and accurate knowledge of one's HIV status (see Section 5.4). Men were asked *Have you ever received an HIV test result?* Overall, 76.6% had ever tested for HIV, of which 11.7% (or 9.0% of all men) had diagnosed HIV infection.

Have you ever received an HIV test result? (n=15,294 missing 66)	**Number**	**%**
No, I've never received an HIV test result	3590	23.5
Yes, I've tested positive (I have HIV infection)	1370	9.0
Yes, my last test was negative (I did not have HIV infection at the time of the test)	10334	67.6

Having ever tested for HIV varied considerably across different groups of men (p<.001 for all). Men who had tested were on average older (mean = 40.0, sd = 12.5) than those who had not (mean = 31.3, sd = 14.3). Those who had tested were also more likely to have a White other (88.3%) or other ethnicity (86.1%) compared to those with a Black or Black/white (82.9%), Asian or Asian/White (78.0%) or White British (74.5%) ethnicity. Men living in the London integrated region were considerably more likely to have ever tested (89.4%) compared to those in the South of England (74.0%), North of England (71.6%) and the Midlands and East of England (70.5%), as were migrants to the UK (87.4%) compared to those born in the UK (74.7%). Men with higher education were also more likely to have ever tested (high 83.6%, medium 70.9%, and low 68.1%). Men with a queer sexual identity were most likely to have tested (83.9%) closely followed by gay or homosexual men (79.1%). Men with a bisexual (59.8%) or a straight or heterosexual identity (34.5%) were far less likely to have ever tested.

Men whose last HIV test result was negative were asked *When did you last have an HIV test?* More than half (52.1%) of men who last test was negative had tested negative in the last six months and almost three quarters (72.8%) of men whose last test was negative received their most recent result in the last 12 months.

When did you last have an HIV test? (n=10,293 missing 41)	***Number***	***%***	***Cumulative %***
Within the last 24 hours	48	0.5	0.5
Within the last 7 days	296	2.9	3.4
Within the last 4 weeks	1292	12.6	16.0
Within the last 6 months	3717	36.1	52.1
Within the last 12 months	2142	20.8	72.9
Within the last 5 years	2134	20.7	93.5
More than 5 years ago	664	6.5	100.0

The British HIV Association and the Health Protection Agency recommend that all men who have sex with men test for HIV every 12 months. Similarly, one of the UNGASS indicators (UNGASS 8) concerns the proportion of men who have received an HIV test in the last 12 months and who know the results. We used answers to the above questions to calculate the proportion of men who had tested for HIV in the last 12 months

In GMSS 2014, 54.5% of men (who had not already been diagnosed with HIV over 12 months ago, n=14039, missing 119) received an HIV test result within the last 12 months.

% of men not living with diagnosed HIV 12 months ago (n=14,039, missing 119, and excluding 1202 who were diagnosed with HIV over 12 months ago)	**Number**	**% not tested for HIV in last 12 months**
Did not receive HIV test result in last 12 months	6388	45.5
Received HIV test result in last 12 months	7651	54.5

6.3 MARKET SHARE FOR DIFFERENT HIV TESTING SETTINGS

The volume and variety of places where men might have tested for HIV has increased substantially in the last decade. All men whose last HIV test was negative were asked where their last test was undertaken, and men with diagnosed HIV were asked where they were first diagnosed with HIV.

Place of diagnosis or last HIV negative test	**Men with diagnosed HIV**		**Men who's last HIV test was negative**	
	Where were you first diagnosed with HIV? (n=1,342, missing 28)		*Where did you go for you last HIV test?* (n=10,115, missing 219)	
	Number	%	Number	%
At a hospital or sexual health clinic as an out-patient	1002	74.9	7307	72.2
At a community HIV testing service (that is not in a hospital or clinic)	46	3.4	708	7.0
I used a self-sampling kit (I took my own sample and sent off for the results)	17	1.3	662	6.5
General Practitioner / family doctor	88	6.6	603	6.0
A doctor in private practice	48	3.6	2396	2.4
I used a self-testing kit (I took my own sample and found out the result on the spot)	11	0.8	158	1.6
At a hospital as an in-patient (staying overnight)	94	7.0	106	1.0
In a bar or pub, club or sauna	3	0.2	100	1.0
At a blood bank, while donating blood	6	0.4	67	0.7
Mobile medical unit	2	0.1	56	0.6
Elsewhere	22	1.6	109	1.1

Almost three quarters of both men with diagnosed HIV and those who last test was HIV negative reported that test was in a hospital or clinic as an out-patient (74.9%/ 72.2%). While the volume and variety of places where test occurs increases, the GUM or sexual health clinic continues to be the most popular service. Among all the other options, only three were mentioned by more than 1-in-20 of the men reporting a negative test – a community testing service (7.0%); a self-sampling service (6.5%) and a general practitioner or family doctor (6.0%).

Men with diagnosed HIV were equally likely to report using a GP, but less likely to report using a self-sampling service or a community testing service, but some may have been first diagnosed before these options were common. Men with diagnosed HIV were more likely to have been diagnosed at a hospital as an in-patient (7.0%) perhaps reflecting an in-patient stay related to HIV disease or testing prior to surgery.

6.4 SATISFACTION WITH HIV TESTING

All men were also asked about their satisfaction with HIV testing services in relation to their confidentiality, the respect with which they were treated and the counselling they received. In the table we differentiate men with diagnosed HIV, who report on the test where they were first diagnosed with HIV, from the men reporting on their last negative HIV test. In each broader column, the figures on the left include men who stated they did not remember, and the figures on the right are the proportions reporting satisfaction excluding those men that could not remember. For the counselling received columns, the right hand columns exclude both the men that reported not receiving counselling and those that could not remember.

Satisfaction with HIV testing service.	***When you were first diagnosed HIV positive OR the last time you tested negative, how satisfied were you with....***											
	...the way the testing service kept your confidentiality?				***...the respect you were treated with?***				***...the counselling you received?***			
	Diagnosed with HIV (n=1,354 missing 16)		Last test negative (n=10,231 missing 103)		Diagnosed with HIV (n=1,345 missing 25)		Last test negative (n=10,151 missing 183)		Diagnosed with HIV (n=1,359 missing 11)		Last test negative (n=10,280 missing 54)	
Didn't receive counselling									27.3		55.6	
Very satisfied	70.8	73.7	80.9	82.2	65.9	67.6	78.5	79.4	25.5	37.8	19.6	52.7
Satisfied	19.1	19.8	16.0	16.3	21.0	21.5	17.2	17.4	22.7	33.6	14.6	39.3
Dissatisfied	2.7	2.8	1.0	1.0	5.6	5.7	2.4	2.4	10.4	15.4	2.1	5.6
Very dissatisfied	3.5	3.7	0.4	0.4	5.1	5.2	0.8	0.8	8.9	13.2	0.9	2.4
I don't remember	4.0		1.6		2.5		1.2		5.3		7.2	

A small proportion of men (4.0%) did not remember or did not think about how the testing service kept their confidentiality when they were first diagnosed. Among the remaining men, the vast majority were satisfied (73.7% very satisfied, 19.8% satisfied) and a minority were dissatisfied (2.8% dissatisfied, 3.7% very dissatisfied) with how the testing service kept their confidentiality.

A small proportion of men (1.6%) did not remember or did not think about whether the testing service treated them with respect when they were first diagnosed. Among the remaining men who expressed a level of satisfaction, the vast majority were satisfied (67.6% very satisfied, 21.5% satisfied) and a minority were dissatisfied (5.7% dissatisfied, 5.2% very dissatisfied) with the level of respect they were treated with.

Among men with diagnosed HIV, almost a quarter (27.3%) reported not receiving counselling when they were first diagnosed, and a small proportion of men (5.3%) did not remember or did not think about whether they received counselling. Among men who remembered receiving counselling, and expressed a level of satisfaction with counselling, the vast majority were satisfied (37.8% very satisfied, 33.6% satisfied) but almost a quarter were dissatisfied (15.4% dissatisfied, 13.2% very dissatisfied) with the counselling they had received upon first HIV diagnosis. Men who received a negative HIV test were much less likely to have received counselling (only 44.4% did so) but less likely to express dissatisfaction with counselling services when they did receive them (8.0% compared to 28.6% among positive men).

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