



American Men's Internet Survey (AMIS): Online HIV Behavioral Survey of Men Who Have Sex with Men United States, 2013



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The *American Men's Internet Survey (AMIS)* online HIV behavioral survey of men who have sex with men is conducted by PRISM Health at Emory University, Atlanta, Georgia. Funding is provided through the MAC AIDS Fund.

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Introduction

Men who have sex with men (MSM) contribute to over half of the more than one million adults living with HIV in the United States [1]. Incidence estimates of HIV infection from 2008 to 2011 have shown an increase in the number of new infections among MSM [2], due to factors including high prevalence, sexual risk behaviors, and not being aware of HIV status. The National HIV Behavioral Surveillance System (NHBS), using venue-based sampling to collect risk behavior data from high-risk populations, has found continued sexual risk and drug use behaviors associated with increased HIV risk among MSM [3]. The Centers for Disease Control and Prevention (CDC) recommends annual HIV testing for sexually active MSM (and more frequent for those with multiple sexual partners) [4], but 2011 NHBS data found only about 67% of HIV-negative or unknown status MSM reported an HIV test in the previous 12 months [5]. Monitoring HIV risk and testing behaviors among MSM is important in understanding epidemic trends and the impact of prevention efforts, including behavioral interventions and strategies to increase HIV testing.

An increasing number of MSM are socializing and identifying sexual partners through the internet, and recruiting MSM online offers an opportunity to supplement venue-based studies, such as NHBS, by including at-risk MSM that may not be reached through traditional means, such as bars and clubs [6]. Additionally, online HIV behavioral surveys allow for the collection of data from a large sample of MSM with broad geographic diversity. This report summarizes findings from a large online HIV behavior survey among MSM. The *American Men's Internet Survey (AMIS)* is a multi-cycle cross-sectional online HIV behavioral survey collecting self-reported data on demographic characteristics, HIV risk behaviors, HIV testing behaviors, and use of HIV prevention services among internet-using MSM in the United States and dependent territories. Participants were recruited online through banner advertisements (ads), and were consented and screened for eligibility after clicking on the ads. Men were eligible for participation if they were 18 years of age or older, U.S. residents, reported ever having oral or anal sex with a man, and able to complete the survey in English. Men who were eligible to participate in the survey completed a self-administered online survey. The survey consisted of a core questionnaire that every participant answered, 3 different subset questionnaires that participants were randomized to at the start of the survey, and an additional set of questions that were asked of participants from mobile-only social networking ads. The core questions were comprised of the following domains: demographics, sexual behavior, HIV testing history, drug and alcohol use, and HIV prevention services exposure. The randomized question subsets were comprised of the following domains: Subset A - knowledge and use of antiretrovirals for HIV prophylaxis and sexually transmitted disease testing/vaccination; Subset B - disclosure of sexual identity and experiences of stigma; Subset C - additional details about most recent male sex partner. The participants from the mobile-only social networking application received an additional set of questions about a potential mobile HIV prevention application and about acute HIV infection. Participants could decline to answer any question. Data were collected using encrypted HIPAA-compliant survey software and stored on an access-restricted secure data server. AMIS is a national research study conducted by Emory University; the procedures and materials were reviewed and approved by Emory's Institutional Review Board.

The tables in this report include data from the 2013 cycle of AMIS, collected between December 2013 and May 2014, among respondents reporting residence in the United States. For demographic categories with small cell sizes, data were collapsed or suppressed to prevent identification using the following criteria: 1) all cell sizes <5 in Table 1 were suppressed or categories were combined into smaller subgroups, 2) for all remaining tables, cell sizes in the

sample number (denominator) <5 were suppressed or combined into smaller subgroups, 3) where the sample size of a subgroup with <5 in the sample could be determined based on the sample numbers in the remaining subgroups, all data were suppressed. Study questions and full categories are available in Appendix A. These data were collected as a convenience sample and may not be representative or generalizable to all MSM.

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Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

		N	%
Race/ethnicity*	Black, non-Hispanic	354	3.4
	Hispanic	1084	10.4
	White, non-Hispanic	8076	77.8
	Other or multiple races	863	8.3
Age (years)	15-24	1982	19.1
	25-29	1515	14.6
	30-39	1918	18.5
	40 or older	4962	47.8
Education	< HS diploma	113	1.1
	HS diploma or equivalent	945	9.1
	Some college or technical degree	3331	32.1
	College degree or postgraduate education	5931	57.2
Income	\$0-19999	1453	14.0
	\$20000-39999	2031	19.6
	\$40000-74999	2629	25.3
	\$75000 or more	3490	33.6
Population density	Urban	6392	61.6
	Rural	3985	38.4
Self-reported HIV status	Positive	1113	10.7
	Negative	7657	73.8
	Unknown	1607	15.5
Anal sex without a condom with a male partner, past 12 month	No	3900	37.6
	Yes	6477	62.4

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

***Persons of Hispanic/Latino ethnicity may be of any race**

NOTE: data may be combined or suppressed due to small cell sizes

Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

		N	%
Illicit substances used, past 12 months	No	7454	71.8
	Yes	2923	28.2
Total		10377	100.0

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

***Persons of Hispanic/Latino ethnicity may be of any race**

NOTE: data may be combined or suppressed due to small cell sizes

Table 2. Sexual behaviors with male partners of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

			<i>Sexual behaviors with male partners in the past 12 months</i>				
			<i>No. in sample</i>	<i>Anal intercourse with a male partner without a condom</i>		<i>Anal intercourse without a condom with a male partner of discordant or unknown HIV status</i>	
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
HIV NEGATIVE OR UNKNOWN	Age (years)	15-24	1892	1217	64.3	442	23.4
		25-29	1391	937	67.4	288	20.7
		30-39	1717	1218	70.9	367	21.4
		40 or older	4264	2301	54.0	656	15.4
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	Race/ethnicity*	Black, non-Hispanic	291	179	61.5	68	23.4
		Hispanic	922	592	64.2	267	29.0
		Other or multiple races	785	494	62.9	162	20.6
		White, non-Hispanic	7266	4408	60.7	1256	17.3
<hr/>							
	Total		9264	5673	61.2	1753	18.9
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HIV POSITIVE	Age (years)	15-24	90	78	86.7	49	54.4
		25-29	124	104	83.9	62	50.0
		30-39	201	148	73.6	90	44.8
		40 or older	698	474	67.9	223	31.9
<hr/>							
	Race/ethnicity*	Black, non-Hispanic	63	46	73.0	27	42.9
		Hispanic	162	110	67.9	75	46.3
		Other or multiple races	78	58	74.4	30	38.5
		White, non-Hispanic	810	590	72.8	292	36.0
<hr/>							
	Total		1113	804	72.2	424	38.1
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Percentages may not total 100% due to missing data

MSM=men who have sex with men

*Persons of Hispanic/Latino ethnicity may be of any race

NOTE: data may be combined or suppressed due to small cell sizes

Table 3. Substance using behaviors of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

			<i>Substance use in the past 12 months</i>				
			<i>No. in sample</i>	<i>Used marijuana</i>		<i>Used illicit drugs other than marijuana</i>	
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
HIV NEGATIVE OR UNKNOWN	Age (years)	15-24	1892	638	33.7	269	14.2
		25-29	1391	390	28.0	220	15.8
		30-39	1717	408	23.8	231	13.5
		40 or older	4264	649	15.2	392	9.2
<hr/>							
	Race/ethnicity*	Black, non-Hispanic	291	66	22.7	22	7.6
		Hispanic	922	218	23.6	101	11.0
		Other or multiple races	785	183	23.3	102	13.0
		White, non-Hispanic	7266	1618	22.3	887	12.2
<hr/>							
	Total		9264	2085	22.5	1112	12.0
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HIV POSITIVE	Age (years)	15-24	90	33	36.7	11	12.2
		25-29	124	51	41.1	25	20.2
		30-39	201	62	30.8	34	16.9
		40 or older	698	170	24.4	136	19.5
<hr/>							
	Race/ethnicity*	Black, non-Hispanic	63	21	33.3	7	11.1
		Hispanic	162	42	25.9	25	15.4
		Other or multiple races	78	30	38.5	21	26.9
		White, non-Hispanic	810	223	27.5	153	18.9
<hr/>							
	Total		1113	316	28.4	206	18.5
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Percentages may not total 100% due to missing data

MSM=men who have sex with men

*Persons of Hispanic/Latino ethnicity may be of any race

NOTE: data may be combined or suppressed due to small cell sizes

Table 4. Sexually transmitted infection testing and hepatitis vaccination of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

			No. in sample**	Sexually transmitted disease testing in the past 12 months		Ever received hepatitis vaccination		
				N	%	N	%	
HIV NEGATIVE OR UNKNOWN	Age (years)	15-24	636	204	32.1	349	54.9	
		25-29	465	206	44.3	288	61.9	
		30-39	561	212	37.8	320	57.0	
		40 or older	1434	322	22.5	691	48.2	
	Race/ethnicity*	Black, non-Hispanic	99	40	40.4	48	48.5	
		Hispanic	310	131	42.3	175	56.5	
		Other or multiple races	257	93	36.2	145	56.4	
		White, non-Hispanic	2430	680	28.0	1280	52.7	
	Total			3096	944	30.5	1648	53.2
	HIV POSITIVE	Age (years)	15-24	37	27	73.0	30	81.1
25-29			39	30	76.9	30	76.9	
30-39			63	43	68.3	45	71.4	
40 or older			243	132	54.3	177	72.8	
Race/ethnicity*		Black, non-Hispanic	19	15	78.9	14	73.7	
		Hispanic	56	41	73.2	38	67.9	
		Other or multiple races	35	20	57.1	25	71.4	
		White, non-Hispanic	272	156	57.4	205	75.4	
Total			382	232	60.7	282	73.8	

Percentages may not total 100% due to missing data

MSM=men who have sex with men

*Persons of Hispanic/Latino ethnicity may be of any race

**Subset of full cohort

NOTE: data may be combined or suppressed due to small cell sizes

Table 5. HIV testing behaviors of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

		<i>No. in sample</i>	<i>Ever HIV tested</i>		<i>HIV tested in the past 12 months</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Race/ethnicity*</i>	Black, non-Hispanic	291	256	88.0	160	55.0
	Hispanic	922	763	82.8	458	49.7
	White, non-Hispanic	7266	6117	84.2	3073	42.3
	Other or multiple races	785	649	82.7	374	47.6
<i>Age (years)</i>	15-24	1892	1224	64.7	815	43.1
	25-29	1391	1176	84.5	688	49.5
	30-39	1717	1571	91.5	878	51.1
	40 or older	4264	3814	89.4	1684	39.5
<i>Education</i>	< HS diploma	98	53	54.1	29	29.6
	HS diploma or equivalent	822	564	68.6	295	35.9
	Some college or technical degree	2934	2349	80.1	1204	41.0
	College degree or postgraduate education	5356	4775	89.2	2516	47.0
<i>Household income</i>	\$0-19999	1252	956	76.4	530	42.3
	\$20000-39999	1794	1509	84.1	840	46.8
	\$40000-74999	2350	2015	85.7	1064	45.3
	\$75000 or more	3148	2822	89.6	1377	43.7
<i>Population density</i>	Urban	5643	4895	86.7	2642	46.8
	Rural	3621	2890	79.8	1423	39.3
<i>Health insurance</i>	None	986	803	81.4	390	39.6
	Private only	6522	5618	86.1	2991	45.9
	Public only	721	592	82.1	292	40.5
	Other/multiple	667	552	82.8	281	42.1

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

***Persons of Hispanic/Latino ethnicity may be of any race**

NOTE: data may be combined or suppressed due to small cell sizes

Table 5. HIV testing behaviors of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

	<i>No. in sample</i>	<i>Ever HIV tested</i>		<i>HIV tested in the past 12 months</i>	
		<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Total</i>	9264	7785	84.0	4065	43.9

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

**Persons of Hispanic/Latino ethnicity may be of any race*

NOTE: data may be combined or suppressed due to small cell sizes

Table 6. Testing location of last HIV test of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

	Location of most recent HIV test	
	N	%
<i>Private doctor's office</i>	3292	45.3
<i>HIV counseling and testing site</i>	1160	16.0
<i>Public health clinic/community health clinic</i>	1575	21.7
<i>Street outreach program/mobile unit</i>	350	4.8
<i>Sexually transmitted disease clinic</i>	139	1.9
<i>Hospital (inpatient)</i>	218	3.0
<i>Correctional facility (jail or prison)</i>	16	0.2
<i>Emergency room</i>	49	0.7
<i>At home</i>	467	6.4

Percentages may not total 100% due to missing data

MSM=men who have sex with men

NOTE: data may be combined or suppressed due to small cell sizes

Table 7. Participation in HIV prevention services of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

		<i>Prevention services received in the past 12 months</i>						
		<i>No. in sample</i>	<i>Received free condoms</i>		<i>Participated in group discussion</i>		<i>Participated in one-on-one prevention counseling</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Race/ethnicity*</i>	Black, non-Hispanic	291	153	52.6	37	12.7	65	22.3
	Hispanic	922	536	58.1	73	7.9	187	20.3
	White, non-Hispanic	7266	3022	41.6	314	4.3	848	11.7
	Other or multiple races	785	417	53.1	54	6.9	133	16.9
<i>Age (years)</i>	15-24	1892	1072	56.7	192	10.1	330	17.4
	25-29	1391	707	50.8	71	5.1	227	16.3
	30-39	1717	797	46.4	75	4.4	236	13.7
	40 or older	4264	1552	36.4	140	3.3	440	10.3
<i>Education</i>	< HS diploma	98	36	36.7	7	7.1	18	18.4
	HS diploma or equivalent	822	309	37.6	50	6.1	118	14.4
	Some college or technical degree	2934	1274	43.4	157	5.4	395	13.5
	College degree or postgraduate education	5356	2481	46.3	256	4.8	693	12.9
<i>Household income</i>	\$0-19999	1252	623	49.8	103	8.2	226	18.1
	\$20000-39999	1794	823	45.9	91	5.1	275	15.3
	\$40000-74999	2350	1032	43.9	114	4.9	308	13.1
	\$75000 or more	3148	1311	41.6	122	3.9	320	10.2
<i>Population density</i>	Urban	5643	2760	48.9	280	5.0	796	14.1
	Rural	3621	1368	37.8	198	5.5	437	12.1

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

***Persons of Hispanic/Latino ethnicity may be of any race**

NOTE: data may be combined or suppressed due to small cell sizes

Table 7. Participation in HIV prevention services of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

		<i>Prevention services received in the past 12 months</i>						
		<i>No. in sample</i>	<i>Received free condoms</i>		<i>Participated in group discussion</i>		<i>Participated in one-on-one prevention counseling</i>	
			<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Health insurance</i>	None	986	467	47.4	53	5.4	154	15.6
	Private only	6522	2889	44.3	307	4.7	797	12.2
	Public only	721	315	43.7	46	6.4	135	18.7
	Other/multiple	667	285	42.7	53	7.9	104	15.6
<i>Total</i>		9264	4128	44.6	478	5.2	1233	13.3

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

**Persons of Hispanic/Latino ethnicity may be of any race*

NOTE: data may be combined or suppressed due to small cell sizes

Table 8. Knowledge of PrEP and willingness to use PrEP of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

		No. in sample	Heard of PrEP		Willing to use PrEP		Ever used PrEP	
			N	%	N	%	N	%
<i>Race/ethnicity*</i>	Black, non-Hispanic	99	44	44.4	50	50.5	0	0.0
	Hispanic	310	129	41.6	159	51.3	4	1.3
	White, non-Hispanic	2430	1092	44.9	987	40.6	31	1.3
	Other or multiple races	257	99	38.5	113	44.0	5	1.9
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<i>Age (years)</i>	15-24	636	202	31.8	325	51.1	6	0.9
	25-29	465	236	50.8	211	45.4	9	1.9
	30-39	561	301	53.7	238	42.4	11	2.0
	40 or older	1434	625	43.6	535	37.3	14	1.0
<hr/>								
<i>Education</i>	< HS diploma	24	5	20.8	10	41.7	0	0.0
	HS diploma or equivalent	270	59	21.9	133	49.3	1	0.4
	Some college or technical degree	986	364	36.9	439	44.5	17	1.7
	College degree or postgraduate education	1794	927	51.7	721	40.2	21	1.2
<hr/>								
<i>Household income</i>	\$0-19999	407	138	33.9	189	46.4	8	2.0
	\$20000-39999	564	224	39.7	260	46.1	4	0.7
	\$40000-74999	770	357	46.4	337	43.8	10	1.3
	\$75000 or more	1081	559	51.7	407	37.7	18	1.7
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<i>Population density</i>	Urban	1882	917	48.7	824	43.8	33	1.8
	Rural	1214	447	36.8	485	40.0	7	0.6
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<i>Health insurance</i>	None	352	129	36.6	155	44.0	2	0.6
	Private only	2151	1039	48.3	896	41.7	33	1.5
	Public only	230	84	36.5	102	44.3	2	0.9
	Other/multiple	239	79	33.1	96	40.2	2	0.8

Percentages may not total 100% due to missing data

MSM=men who have sex with men

*Persons of Hispanic/Latino ethnicity may be of any race

**Subset of full cohort

NOTE: data may be combined or suppressed due to small cell sizes

Table 8. Knowledge of PrEP and willingness to use PrEP of HIV-negative or unknown serostatus participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2013

	<i>No. in sample</i>	<i>Heard of PrEP</i>		<i>Willing to use PrEP</i>		<i>Ever used PrEP</i>	
		<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>Total</i>	3096	1364	44.1	1309	42.3	40	1.3

Percentages may not total 100% due to missing data

MSM=men who have sex with men

**Persons of Hispanic/Latino ethnicity may be of any race*

***Subset of full cohort*

NOTE: data may be combined or suppressed due to small cell sizes