



American Men's Internet Survey (AMIS): Online HIV Behavioral Survey of Men Who Have Sex with Men United States, 2016



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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 15 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 and 2 different subset questionnaires that participants were randomized to at the start of the survey. The core questions were comprised of the following domains: demographics, sexual behavior, HIV testing history, drug and alcohol use, acute HIV infection and other infections, HIV prevention services exposure, and pre-exposure prophylaxis (PrEP). 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 2016 cycle of AMIS, collected between September 2016 and February 2017, 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 living in a given state.

References

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Table 1. Characteristics of participants in an online survey of MSM, United States, American Men's Internet Survey (AMIS), 2016

		N	%
Race/ethnicity*	Black, non-Hispanic	879	8.6
	Hispanic	1311	12.9
	White, non-Hispanic	7073	69.6
	Other or multiple races	903	8.9
Age (years)	15-24	2718	26.7
	25-29	1693	16.7
	30-39	1414	13.9
	40 or older	4341	42.7
Education	< HS diploma	391	3.8
	HS diploma or equivalent	1068	10.5
	Some college or technical degree	3336	32.8
	College degree or postgraduate education	5214	51.3
Income	\$0-19999	1272	12.5
	\$20000-39999	1669	16.4
	\$40000-74999	2290	22.5
	\$75000 or more	2987	29.4
NCHS Urban/Rural category	Urban	4288	42.2
	Suburban	2200	21.6
	Medium/small metro	2790	27.4
	Rural	884	8.7
Self-reported HIV status	Positive	1098	10.8
	Negative	7089	69.7
	Unknown	1979	19.5

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

NCHS=National Center for Health Statistics

***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), 2016

		N	%
Anal sex without a condom with a male partner, past 12 month	No	3360	33.1
	Yes	6806	66.9
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Illicit substances used, past 12 months	No	6980	68.7
	Yes	3186	31.3
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Total		10166	100.0

Percentages may not total 100% due to missing data

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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), 2016

			Sexual behaviors with male partners in the past 12 months				
			No. in sample	Anal intercourse with a male partner without a condom		Anal intercourse without a condom with a male partner of discordant or unknown HIV status	
				N	%	N	%
HIV Negative or Unknown	Age (years)	15-24	2659	1694	63.7	417	15.7
		25-29	1596	1202	75.3	285	17.9
		30-39	1228	892	72.6	232	18.9
		40 or older	3585	2186	61.0	522	14.6
<hr/>							
	Race/ethnicity*	Black, non-Hispanic	631	388	61.5	116	18.4
		Hispanic	1181	833	70.5	218	18.5
		Other or multiple races	815	522	64.0	112	13.7
		White, non-Hispanic	6441	4231	65.7	1010	15.7
<hr/>							
	Total		9068	5974	65.9	1456	16.1
<hr/>							
HIV Positive	Age (years)	15-24	59	50	84.7	21	35.6
		25-29	97	80	82.5	48	49.5
		30-39	186	159	85.5	76	40.9
		40 or older	756	543	71.8	220	29.1
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	Race/ethnicity*	Black, non-Hispanic	248	175	70.6	76	30.6
		Hispanic	130	96	73.8	34	26.2
		Other or multiple races	88	69	78.4	37	42.0
		White, non-Hispanic	632	492	77.8	218	34.5
<hr/>							
	Total		1098	832	75.8	365	33.2

Percentages may not total 100% due to missing data

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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), 2016

			<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	2659	886	33.3	550	20.7
		25-29	1596	500	31.3	390	24.4
		30-39	1228	322	26.2	278	22.6
		40 or older	3585	558	15.6	456	12.7
<hr/>							
	Race/ethnicity*	Black, non-Hispanic	631	126	20.0	86	13.6
		Hispanic	1181	344	29.1	280	23.7
		Other or multiple races	815	199	24.4	141	17.3
		White, non-Hispanic	6441	1597	24.8	1167	18.1
<hr/>							
	Total		9068	2266	25.0	1674	18.5
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HIV Positive	Age (years)	15-24	59	22	37.3	21	35.6
		25-29	97	33	34.0	42	43.3
		30-39	186	71	38.2	67	36.0
		40 or older	756	182	24.1	179	23.7
<hr/>							
	Race/ethnicity*	Black, non-Hispanic	248	66	26.6	54	21.8
		Hispanic	130	40	30.8	45	34.6
		Other or multiple races	88	26	29.5	24	27.3
		White, non-Hispanic	632	176	27.8	186	29.4
<hr/>							
	Total		1098	308	28.1	309	28.1

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), 2016

			<i>No. in sample</i>	<i>Sexually transmitted disease testing in the past 12 months</i>		<i>Ever received hepatitis vaccination</i>	
				<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
<i>HIV Negative or Unknown</i>	<i>Age (years)</i>	15-24	2659	935	35.2	1518	57.1
		25-29	1596	848	53.1	1049	65.7
		30-39	1228	617	50.2	744	60.6
		40 or older	3585	1239	34.6	1716	47.9
	<i>Race/ethnicity*</i>	Black, non-Hispanic	631	313	49.6	319	50.6
		Hispanic	1181	566	47.9	639	54.1
		Other or multiple races	815	351	43.1	513	62.9
		White, non-Hispanic	6441	2409	37.4	3556	55.2
	<i>Total</i>		9068	3639	40.1	5027	55.4
<i>HIV Positive</i>	<i>Age (years)</i>	15-24	59	47	79.7	42	71.2
		25-29	97	80	82.5	67	69.1
		30-39	186	152	81.7	138	74.2
		40 or older	756	499	66.0	482	63.8
	<i>Race/ethnicity*</i>	Black, non-Hispanic	248	178	71.8	164	66.1
		Hispanic	130	105	80.8	83	63.8
		Other or multiple races	88	69	78.4	58	65.9
		White, non-Hispanic	632	426	67.4	424	67.1
	<i>Total</i>		1098	778	70.9	729	66.4

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 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), 2016

		No. in sample	Ever HIV tested		HIV tested in the past 12 months	
			N	%	N	%
<i>Race/ethnicity*</i>	Black, non-Hispanic	631	563	89.2	440	69.7
	Hispanic	1181	916	77.6	710	60.1
	White, non-Hispanic	6441	5134	79.7	3512	54.5
	Other or multiple races	815	635	77.9	457	56.1
<i>Age (years)</i>	15-24	2659	1521	57.2	1207	45.4
	25-29	1596	1393	87.3	1040	65.2
	30-39	1228	1129	91.9	829	67.5
	40 or older	3585	3205	89.4	2043	57.0
<i>Education</i>	< HS diploma	380	131	34.5	100	26.3
	HS diploma or equivalent	950	583	61.4	388	40.8
	Some college or technical degree	2918	2309	79.1	1629	55.8
	College degree or postgraduate education	4681	4148	88.6	2953	63.1
<i>Household income</i>	\$0-19999	1112	803	72.2	572	51.4
	\$20000-39999	1457	1190	81.7	835	57.3
	\$40000-74999	2064	1756	85.1	1204	58.3
	\$75000 or more	2685	2275	84.7	1588	59.1
<i>NCHS Urban/Rural category</i>	Urban	3720	3215	86.4	2415	64.9
	Suburban	1974	1547	78.4	1079	54.7
	Medium/small metro	2546	1922	75.5	1271	49.9
	Rural	824	560	68.0	352	42.7

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NCHS=National Center for Health Statistics

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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), 2016

		<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>Health insurance</i>	None	1441	1149	79.7	810	56.2
	Private only	5466	4582	83.8	3288	60.2
	Public only	947	709	74.9	471	49.7
	Other/multiple	799	632	79.1	418	52.3
<i>Total</i>		9068	7248	79.9	5119	56.5

Percentages may not total 100% due to missing data

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HS=high school

NCHS=National Center for Health Statistics

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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), 2016

	Location of most recent HIV test	
	N	%
<i>Private doctor's office</i>	3394	48.6
<i>HIV counseling and testing site</i>	807	11.6
<i>Public health clinic/community health clinic</i>	1394	20.0
<i>Street outreach program/mobile unit</i>	291	4.2
<i>Sexually transmitted disease clinic</i>	131	1.9
<i>Hospital (inpatient)</i>	216	3.1
<i>Correctional facility (jail or prison)</i>	13	0.2
<i>Emergency room</i>	40	0.6
<i>At home</i>	421	6.0

Percentages may not total 100% due to missing data

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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), 2016

		<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	631	373	59.1	79	12.5	161	25.5
	Hispanic	1181	697	59.0	98	8.3	261	22.1
	White, non-Hispanic	6441	2815	43.7	250	3.9	703	10.9
	Other or multiple races	815	423	51.9	47	5.8	131	16.1
<i>Age (years)</i>	15-24	2659	1402	52.7	194	7.3	422	15.9
	25-29	1596	824	51.6	84	5.3	234	14.7
	30-39	1228	612	49.8	63	5.1	195	15.9
	40 or older	3585	1470	41.0	133	3.7	405	11.3
<i>Education</i>	< HS diploma	380	122	32.1	33	8.7	65	17.1
	HS diploma or equivalent	950	393	41.4	55	5.8	134	14.1
	Some college or technical degree	2918	1414	48.5	153	5.2	398	13.6
	College degree or postgraduate education	4681	2327	49.7	224	4.8	638	13.6
<i>Household income</i>	\$0-19999	1112	584	52.5	82	7.4	191	17.2
	\$20000-39999	1457	738	50.7	86	5.9	231	15.9
	\$40000-74999	2064	988	47.9	100	4.8	262	12.7
	\$75000 or more	2685	1201	44.7	96	3.6	321	12.0
<i>NCHS Urban/Rural category</i>	Urban	3720	2065	55.5	227	6.1	637	17.1
	Suburban	1974	902	45.7	90	4.6	228	11.6
	Medium/small metro	2546	1070	42.0	118	4.6	317	12.5
	Rural	824	268	32.5	38	4.6	72	8.7

Percentages may not total 100% due to missing data

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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), 2016

		<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	1441	669	46.4	75	5.2	200	13.9
	Private only	5466	2595	47.5	248	4.5	708	13.0
	Public only	947	465	49.1	66	7.0	160	16.9
	Other/multiple	799	395	49.4	58	7.3	131	16.4
<i>Total</i>		9068	4308	47.5	474	5.2	1256	13.9

Percentages may not total 100% due to missing data

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**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), 2016

		No. in sample	Heard of PrEP		Willing to use PrEP		Ever used PrEP	
			N	%	N	%	N	%
<i>Race/ethnicity*</i>	Black, non-Hispanic	631	448	71.0	304	48.2	53	8.4
	Hispanic	1181	822	69.6	629	53.3	110	9.3
	White, non-Hispanic	6441	4607	71.5	2982	46.3	545	8.5
	Other or multiple races	815	577	70.8	406	49.8	72	8.8
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<i>Age (years)</i>	15-24	2659	1737	65.3	1578	59.3	106	4.0
	25-29	1596	1319	82.6	790	49.5	207	13.0
	30-39	1228	998	81.3	579	47.1	167	13.6
	40 or older	3585	2400	66.9	1374	38.3	300	8.4
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<i>Education</i>	< HS diploma	380	148	38.9	240	63.2	4	1.1
	HS diploma or equivalent	950	493	51.9	492	51.8	25	2.6
	Some college or technical degree	2918	2047	70.2	1474	50.5	196	6.7
	College degree or postgraduate education	4681	3706	79.2	2049	43.8	552	11.8
<hr/>								
<i>Health insurance</i>	None	1441	884	61.3	677	47.0	84	5.8
	Private only	5466	4275	78.2	2638	48.3	568	10.4
	Public only	947	556	58.7	426	45.0	65	6.9
	Other/multiple	799	533	66.7	357	44.7	57	7.1
<hr/>								
<i>Household income</i>	\$0-19999	1112	732	65.8	636	57.2	59	5.3
	\$20000-39999	1457	1048	71.9	710	48.7	116	8.0
	\$40000-74999	2064	1535	74.4	961	46.6	192	9.3
	\$75000 or more	2685	2043	76.1	1147	42.7	296	11.0

Percentages may not total 100% due to missing data

MSM=men who have sex with men

HS=high school

PrEP= pre-exposure prophylaxis

NCHS=National Center for Health Statistics

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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), 2016

		<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>NCHS Urban/Rural category</i>	Urban	3720	2871	77.2	1656	44.5	501	13.5
	Suburban	1974	1387	70.3	980	49.6	125	6.3
	Medium/small metro	2546	1731	68.0	1279	50.2	131	5.1
	Rural	824	461	55.9	404	49.0	23	2.8
<i>Total</i>		9068	6454	71.2	4321	47.7	780	8.6

Percentages may not total 100% due to missing data

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